

Sika MonoTop[®]-615 HB

High build repair mortar

Construction

Description	Sika MonoTop-615 HB is a cementitious polymer and Silica Fume modified, one-component repair and patching mortar.
Uses	<p>As a repair mortar on concrete structures affected by spalling due to corroding reinforcement.</p> <p>As a concrete patching and reprofiling mortar for the treatment of:</p> <ul style="list-style-type: none">▪ Honeycombing and voids caused by faulty formwork.▪ Broken upstands, ribs, edges, etc. on architectural units.▪ Break outs for service entrances in walls and slabs etc. <p>For use in conjunction with the Sika concrete repair system:</p> <ul style="list-style-type: none">▪ SikaTop-110 EpoCem Bonding Mortar and Reinforcement Protection.▪ Sika MonoTop-615 HB Patching Mortar.▪ Sika MonoTop-620 Fairing Coat.
Advantages	<ul style="list-style-type: none">▪ One-component system requires only the addition of clean water.▪ Easily applied and worked.▪ Adjustable consistency to suit application.▪ Non-sagging in vertical and overhead work.▪ Layers of up to 80 mm in one application are possible on vertical surfaces.▪ Compatible with the thermal expansion properties of concrete.▪ Contains shrinkage compensating admixture.▪ Free from chlorides.▪ Non-corrosive to reinforcing steel.▪ Non-toxic.▪ Applicable by trowel or suitable wet-mix process spray equipment.▪ Approved for use in potable water (AS4020-1999)
Storage and Shelf Life	Stored in the original sealed packaging in dry conditions, this product will keep for at least nine (9) months.
Instructions for Use	
Surface Preparation	<p>Correct and thorough surface preparation is essential to achieve the high adhesive qualities of Sika MonoTop mortars.</p> <p>All surfaces must be clean, sound and free from dust, ice, oils, grease or other surface contaminants such as curing membranes and form release agents etc.</p> <p><i>Concrete, Mortar, Stone:</i> Mechanically abrade the surface with a needle gun, mechanical wire brush, grind, grit or water blast. All surface laitance must be removed.</p> <p>The strength of the concrete or mortar substrate should be at least 20MPa.</p> <p>The prepared substrate should be thoroughly soaked with clean water until uniformly saturated, leaving no standing water, ie. Saturated Surface Dry (SSD) condition.</p>
Bonding Bridge	To the prepared substrate apply Sika MonoTop-610 or SikaTop-110 EpoCem as a bonding bridge in accordance with the instructions on the Technical Data Sheet.



**Bonding Bridge
(continued)**

In some circumstances alternate bonding bridge material may be preferable eg. Sikadur-32; please consult Sika's Technical Department for further information.
In all cases the bonding bridge must be tacky at the time of applying Sika MonoTop-615 HB, ie. wet on wet application.

Mixing

Sika MonoTop-615 HB should be mechanically mixed in a forced action mixer or in a clean drum using a low speed drill and spiral mixer (max. 500rpm).
Pour 90% of the recommended water content into the mixing vessel, slowly add the powder while continuing to mix. Continue mixing until a uniform homogenous consistency is achieved (minimum 3 minutes) then add the remaining water until the desired application consistency is obtained.
If Sika MonoTop-615 HB begins to stiffen within a few minutes of mixing, it may be necessary to remix the mortar to regain a smooth, workable mix.
Note that the recommended water addition of 3 litres per 20kg bag can be adjusted by plus or minus 10% to achieve the desired application necessary.

Application

Sika MonoTop-615 HB must be applied wet on wet to the substrate previously primed with Sika MonoTop-610, SikaTop-110 EpoCem or Sikadur-32. Work the mortar well into the substrate, using a placing rather than a rendering technique to fill all pores and voids. Compact well.
Force material against the edge of the repair, working towards the centre.
For repairs in excess of 80mm deep, apply in layers ensuring previous layers are well keyed and hardened.
Application of a bonding bridge between layers is recommended to ensure optimum bond.

Finishing

When the applied mortar has stiffened, but not dried, various methods may be employed to obtain the desired surface finish, eg. steel trowel, wood float, styrofoam block or sponge.
The addition of water to the surface to obtain the desired finish is not recommended as this may cause colour variations and surface cracking.
Where Sika MonoTop-615 HB is to be overcoated with a fairing mortar (eg. Sika MonoTop-620) or protective coating (eg. Sikagard-680S) the surface should be finished to provide a fine gripping texture.

Cleaning

Remove soft Sika MonoTop-615 HB from tools and equipment with water. Hardened material can only be removed mechanically.

**Additional Protective and
Decorative Coatings**

The remaining areas of the structure can be coated with Sika FerroGard-903 to fully protect the steel reinforcement from potential corrosion.
Sika MonoTop-620 is recommended as a final fairing coat and additional protective anti-carbonation coating to the patched area and also to the remaining areas of the structure, not yet showing the effects of, but susceptible to spalling due to corroding reinforcement.
Sikagard-680 S and Sikagard-670 W are also recommended as further decorative and protective coatings.
Consult Sika's Technical Department for further information on this range of coating products.

Curing

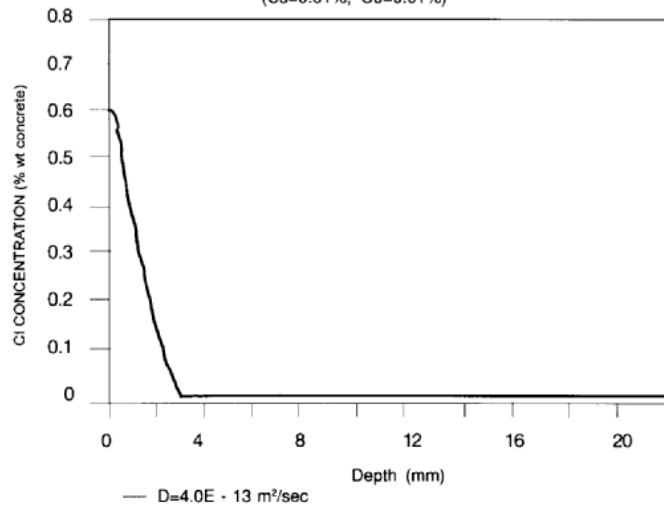
Suitable curing methods as per the Concrete Institute's recommended practice, such as plastic sheet, wet hessian, liquid membrane (eg. Sikagard-680 S (Finish), Sikagard-551 S Primer or Antisol curing compounds) must be used to protect the freshly applied mortar from the drying effects of sun and wind.



Technical and Physical Data

Form	Lightweight, smooth mortar	
Granulometry	0-1.5 mm	
Density	1.65 kg/litre approx. (fresh wet density)	
Yield	14 litres of mixed mortar per 20kg bag (approx.)	
Mixing ratio	Water : Powder 1 : 6.7 by mass 3 litres : 20kg <i>Note that the water addition rate can be adjusted by a ±10% to achieve the desired application consistency.</i>	
Potlife @ 20°C	50 minutes approximately	
Application Thickness	Minimum 5 mm Maximum 80 mm	
Application Temperature	+5 °C - +35°C (substrate and ambient temperature) +5°C - 25°C(mortar temperature)	
Compressive strength (AS 1012)	24 hours	15 MPa approx.
	7 days	30 MPa approx.
	28 days	40 MPa approx.
Flexural Strength (AS 1012)	6.5 MPa approx. at 28 days	
Bond Strength	1.0 – 1.3 MPa approx. (cohesive failure of mortar) (using Sika MonoTop-610 bonding bridge on concrete substrate)	
Chloride Ion Diffusion Resistance (Taywood Method)	4.0 x 10 ⁻¹³ m ² /sec	

Determined Diffusion Coefficient: 4.0 x 10⁻¹³ m²sec⁻¹
P7603D (MonoTop-615HB), 28 days exposure
(Cs=0.61%, Co=0.01%)



Technical and Physical Data (cont'd)

Modulus of Elasticity (AS 1012) 15 GPa approx.

Coefficient of thermal expansion 11×10^{-6} per °C

Water vapour diffusion resistance ($\mu\text{H}_2\text{O}$) 130

Carbon Dioxide Diffusion Resistance (Taywood Method)

CO ₂ Diffusion Coefficient	1.4×10^{-4} cm ² /sec
Diffusion Resistance Coefficient (μ):	1143
Equivalent Air Layer Thickness (R):	57m @ 50mm thickness
Equivalent Thickness of Concrete (Sc):	140mm @ 50mm thickness

Oxygen Diffusion Resistance (Taywood Certificate No. 833) 8.2×10^{-4} cm²/sec

Colour Light Grey

Packaging 20kg bag

Important Notes

- Apply only to clean sound substrates.
- Never apply to dry substrates.
- In warm, hot or windy conditions ensure adequate curing of freshly applied mortar.
- Sika MonoTop-615 HB mortar will not bridge live cracks.
- Sika MonoTop-615 HB has various uses which may necessitate adjusting the consistency slightly to better suit the particular application. A reduction of up to 10% of either the powder or water is permissible to either stiffen or increase workability of the mixed mortar.
- Not suitable as an adhesive for ceramic wall tiles.
- Refer to Sika's Technical Department for a full concrete repair and protection system.

Handling Precautions

- Avoid contact with the skin.
- Protective gloves and clothing are recommended when mixing or using this product.
- A full Material Safety Data Sheet is available from Sika on request.

Important Notification

The information, and, in particular, the recommendations relating to the application and end-use of Sika's 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. All orders are accepted subject of our terms and conditions of sale. Users should always refer to the most recent issue of the Australian version of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.

PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.

