

PRODUCT DATA SHEET

SikaGrout[®] HES

HIGH EARLY STRENGTH AND RAPID SET CEMENTITIOUS GROUT

DESCRIPTION

SikaGrout HES is a ready mixed, high quality, Class C shrinkage compensated grout that sets rapidly with high early strength gain. SikaGrout HES is a blend of high alumina cement is based on supplementary cementitious material aggregates and Sika admixtures, enabling it to achieve high strengths in short time frame.

USES

SikaGrout-HES is used in a wide range of applications where rapid strength and return to service is required, such as:

- Machine base plates
- Anchoring
- Starter bars
- Bridge bearing pads
- Pre-cast panel grouting
- Cavities, gaps and recesses

CHARACTERISTICS / ADVANTAGES

- High early strengths (even at low temperatures).
- High 28 day strengths.
- Good flow characteristic.
- Rapid set times.
- Adjustable consistency.
- Does not segregate or bleed.
- High impact and thermal resistance.
- Non corrosive to steel or iron.

APPROVALS / CERTIFICATES

Department of Main Roads Qld (TMR) 2019, Product Index for Bridges and Other Structures, Section 5. Registered and Conforming Products, 5.33 Repair Materials (Concrete) – Grouts

PRODUCT INFORMATION

Packaging	20kg bag
Appearance / Colour	Grey Powder
Shelf life	9 months
Storage conditions	Stored in a dry, unopened original containers protected from direct sunlight and frost.
Density	~2200 kg/m ³ approx. (dependent on water addition rate)
Maximum Grain Size	Maximum particle size for pumping ~2.0mm

TECHNICAL INFORMATION

Compressive Strength	Age	Flowable	AS1478.2 - 2005 tested @ 23°C
	2 hours	~15 MPa	
	4 hours	~24 MPa	
	1 day	~30 MPa	
	28 days	~65 MPa	
Electrical Resistivity	7 days	~17,000	FM5-578 Resistivity (Ω.cm)
	28 days	~21,000	
	56 days	~24,000	

APPLICATION INFORMATION

Mixing Ratio	Flowable consistency add 3.2 to 3.5 litres of water per 20 kg bag. Trowellable consistency add 2.5 to 2.8 litres of water per 20kg bag.		
Fresh Mortar Density			
Yield		Trowellable	Flowable
	Yield per 20kg bag	~8.5lt	~9.5lt
	Approx.Qty of 20kg bags per 1m ³	~118 bags	~105 bags
Layer Thickness	10mm-150mm @ 23°C		
Flowability	~50 sec		AS1478.2:2005 Flow Cone-Flowable consistency
Pot Life	20 minutes approx.		
Initial Set Time	~12 mins		AS2350.4:2006 @ 23°C
Setting Time	~17mins		AS2350.4:2006

APPLICATION INSTRUCTIONS

EQUIPMENT

SUBSTRATE QUALITY / PRE-TREATMENT

MIXING

Equipment

SikaGrout-HES must be mixed using a mechanical grout mixer or a suitable drum mixer. The grout mixer will reduce the mix becoming lumpy or aerated. Smaller quantities should be mixed in a clean drum using an electric drill. i.e. Festo or similar spiral mixer at a speed of approximately 500RPM. DO NOT MIX BY HAND.

Method

Add approx. 70% of water to 20kg pail, slowly add powder while mixing to wet out product fully, add remaining water at a steady rate while continuing to mix. Continue to mix for an additional 3-5 mins. Do not add more water to increase flow if material has stiffened due to time delays on resting, remixing can reactivate. If grout is unworkable discard.

APPLICATION

SikaGrout-HES can be placed by gravity flow or by pump. It is essential that proper placing is completed without problems. Sufficient labour, grout and equipment must be present to ensure continuous placement.

Gravity Flow

Mixed grout should be poured one side of the void to

avoid air entrapment. Grout is best poured over short distances to ensure this. Use a suitable header box, maintaining the grout head at all times to ensure continuous flow.

To facilitate grout compaction and top plate contact, use rodding, tamping or flexible strapping in short strokes while maintaining an adequate head of grout. Do not vibrate as this will cause segregation. Any adjacent machinery or equipment causing vibration should be shut down until initial set.

Pumping

When pumping SikaGrout-HES, ensure the pump is suitable for the grout consistency and for the distance and height it is to be pumped. A positive displacement pump is recommended. Place grout by pumping into the farthest corner, filling the space gradually. Ensure that air is not entrapped under the base plate.

Placement Thickness

Minimum thickness is 10 mm. Maximum thickness in one pass is 100 mm. Any grout pour that exceeds this should be done in stages, or have stone aggregate added to it, to reduce the exothermic heat.

Aggregate Addition

Coarse aggregate can be added to mixed SikaGrout-HES to achieve a stronger grout, to increase the thickness of grout placed in one pass, or to increase yield. It is recommended that aggregate size be 10 mm, however as a guide the maximum aggregate size should not be more than 1/5 of the thickness of the section to be cast. The aggregate shape, and the quantity added, will effect the workability of the mix. Smooth rounded aggregate is found to produce the

most workable mix.

The recommended maximum aggregate addition rate is 20kg per 20kg bag of SikaGrout-HES.

The other option will be to add SikaGrout Aggregate to the mix to increase the thickness of the grout placed.

CURING TREATMENT

Suitable curing methods such as plastic sheet, wet hessian, curing compounds (eg, Sika Film for initial placement then Sika Antisol curing compounds after initial set) etc. must be used to protect the freshly applied grout from the drying effects of sun and wind. Curing must commence immediately after placement, and continue for at least 7 days. Curing is vital to the ultimate performance of grout as it allows optimum strength development and ensures tight contact with the baseplate.

CLEANING OF EQUIPMENT

Remove uncured SikaGrout-HES from tools and equipment with water. Hardened material can only be removed mechanically.

FURTHER INFORMATION

IMPORTANT CONSIDERATIONS

- Do not mix SikaGrout-HES with any Portland cement based materials.
- For detailed information on grouting application and guidelines, refer to Sika Grouting Method Statement.
- Store SikaGrout-HES in dry conditions in unopened original packaging.
- Never apply to a dry substrate.
- Trials should always be conducted SikaGrout-HES to determine performance under local conditions.

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.

LOCAL RESTRICTIONS

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

SikaGrout and Sikadur products are tested in accordance with Australian Standards and/or Internationally accepted Standards. The published performance data is achieved by testing strictly in accordance to the procedures of these standards.

Any test procedures performed by others on our products that are not in strict accordance with the standard in every facet will likely produce results different from the published above. On site testing by others can be affected by external factors such as incorrect mixing methods, poor sampling techniques, varying temperatures, curing, crushing procedures etc. Sika can provide Certificates of Compliance of all products delivered to site prior to installation if required.

If results of site testing or testing facilities by others vary from the Sika published data we recommend the following items be reviewed before contacting the manufacturer as one or all of these items could be influencing the results attained on site.

These include but are not limited to the following: site conditions, ambient, substrate and product temperature, mixing equipment, mixer speed, pump equipment, contractor experience, and incorrect test methods.

Sika Australia do not take responsibility nor have to make a case for any such tests where results of testing by others do not achieve the published data as above.

ECOLOGY, HEALTH AND SAFETY

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.

Sika Australia Pty Limited

ABN 12 001 342 329

aus.sika.com

Tel: 1300 22 33 48



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