BUILDING TRUST

PRODUCT DATA SHEET

SikaGrout® HES NZ

High early strength, shrinkage compensated, pourable cementitious grout

DESCRIPTION

SikaGrout® HES NZ is a cementitious grout containing a carefully formulated blend of natural aggregates and other materials, plus Sika admixtures, which enable it to achieve high early age strengths. It contains materials that provide positive expansion in the plastic phase and shrinkage compensation once hardened. SikaGrout® HES NZ is used in details where the material can be confined and restrained during placement and curing to optimise these characteristics. SikaGrout® HES NZ is a one component grout and only requires the addition of clean, fresh water.

USES

SikaGrout® HES NZ is ideal for many types of structural grouting applications. It can be mixed at different stages of fluidity to produce the desired level of workability. Add the required amount of water for:

- Rammable dry pack material
- Trowel applied medium flow mortar
- Pourable high flow grout

Typical applications for SikaGrout® HES NZ are:

- Under machine foundations and base plates
- For gaps 15 mm to 80 mm
- Grouts for anchor bolts, ground anchors, rods, etc.
- Reinforcement ducts in the connection detail between precast columns and beams

CHARACTERISTICS / ADVANTAGES

- Positive shrinkage compensation
- High early age strength development
- High final strengths
- Excellent substrate adhesion
- Adjustable consistency
- High flow characteristics
- Controlled bleeding and segregation while plastic

PRODUCT INFORMATION

Packaging	25 kg bags
Appearance / Colour	Grey powder
Shelf Life	Six (6) months from date of manufacture when stored as stated.
Storage Conditions	Store in unopened, original containers, free from frost and below +25°C.
Density	~ 2,100 – 2,200 kg/m³ (depending on water addition)

TECHNICAL INFORMATION

Compressive Strength

Consistency:	Stiff	Plastic	Flowable
Water Addition:	2.7 litres/25 kg HES	3.275 litres/ 25kg HES	3.85 litres/25 kg HES
2 hours	~25 MPa	~18 MPa	~10 MPa
4 hours	~30 MPa	~22 MPa	~15 MPa
8 hours	~33 MPa	~28 MPa	~22 MPa
24 hours	~38 MPa	~32 MPa	~28 MPa
7 days	~40 MPa	~35 MPa	~32 MPa
28 days	~45 MPa	~38 MPa	~35 MPa

Approximate compressive strengths at +20°C

APPLICATION INFORMATION

Mixing Ratio	Maximum water content: 3.85 litres/25 kg bag
Yield	As a pourable grout (approx.): 25 kg = 13.6 litres when mixed with 3.85 litres of water

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.

LIMITATIONS

- For further information on pre-packed aggregate repairs contact the Sika Technical Department.
- Large volumes of cement rich grout can generate excessive amounts of heat whilst hardening as a result of the cement hydration process. This heat build up may in some cases lead to thermal cracking within the grout as it cools down. For applications requiring larger volumes it is recommended that our high strength, Sika MonoTop®-438 R (refer separate data sheet) be used.
- For concrete repairs refer to the Sika MonoTop® Range.

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 Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

Surface Preparation:

- Concrete surfaces should be clean, sound and free from dust, oils, grease, loosely adhering particles or any other surface contaminants that will affect bond.
- The surface must be scabbled or sandblasted to remove all weak cement laitance.
- Dry concrete substrates shall be saturated with water for several hours, and the surface allowed to dry (to achieve what is referred to as a 'saturated surface dry' condition) before grouting commences. Care should be taken to blow water out of all bolt holes and pockets.
- Metal surfaces (iron and steel) should be free from rust, scale, oil, grease, etc.

Formwork Preparation

- Formwork must be constructed to prevent any leakage of the plastic grout.
- Formwork should be constructed in such a manner as to ensure that a minimum horizontal surface area is left exposed. The formwork must be able to rigidly confine the grout during its expansion process.
- When grouting under base plates, etc, formwork should be constructed to ensure that a head of grout higher than the level of the base plate is maintained. This will provide a constant full flow of grout under the base plate to avoid the occurrence of air entrapment under the plate.
- When filling any detail ensure that an adequate volume of mixed grout is available to allow for a continuous and uninterrupted flow.
- In areas of formwork where air pockets may occur it is necessary to install bleed tubes or openings that will allow entrapped air to escape.
- When providing formwork for pre-packed aggregate repairs the forms may need to be built up in layers to allow for the aggregate to be packed into the cavity.
- In many cases it may be necessary to install grouting tubes or pipes that enable the cavity to be filled from bottom to top. This will force any air upwards and

help to eliminate the possibility of air locks being formed.
- Ensure that all formwork has been thoroughly treated with a suitable mould release agent.
- Flush out all forms with clean, fresh water prior to grout placement.

MIXING

Application temp: +5ºC to +25 ºC. Pour the required amount of clean, fresh water into a suitable mixing container and slowly add all of the powder while mixing continuously with a Sika mixing paddle attached to a low speed electric drill (max. 500 rpm). Mix for 2-3 minutes until a smooth, lump free consistency is achieved.

APPLICATION

Grout should be placed into forms immediately after mixing, taking care to ensure no air is trapped.

CURING TREATMENT

Formwork should be left in place for at least 5 days if possible, to prevent moisture evaporation and provide restraint to early age hardened expansion. Once formwork is removed the use of a suitable curing membrane such as Sika Antisol® should be applied to any exposed faces. Refer to separate data sheet for further information.

CLEANING OF TOOLS

Clean all tools and equipment with water immediately after use. Hardened SikaGrout® HES NZ can only be removed mechanically.

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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