BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET

SikaFix® HH LV

LOW-VISCOSITY, EXPANDING, FLEXIBLE AND POTABLE WATER COMPATIBLE POLYURETHANE INJECTION GROUT

PRODUCT DESCRIPTION

SikaFix® HH LV is a one-component, high solids and drinking water compatible hydrophobic (water-reacted) polyurethane injection grout of low viscosity. It will stop flowing water and displace it from cracks and voids, replacing the water with a flexible and closed cell foam. SikaFix® HH LV can be used alone or with SikaFix® HH LV Accelerator to halt the passage of water through joints or defects in concrete and masonry and provide an effective seal.

WHERE TO USE

- To stop water under hydrostatic pressure leaking through joints and cracks in concrete and masonry.
- Fills and seals voids in defective (honeycombed) substrates, preventing the passage of water.
- In limestone tunnels and dams, around pipe intrusions, drinking and wastewater tanks, reservoirs, sewers, manholes and utility boxes where the passage of water must be stopped.

CHARACTERISTICS / ADVANTAGES

- Low-viscosity permits injection into narrow, hair-line cracks
- Hydrophobic; only a small amount of water is needed for reaction
- Expands up to 30 times in volume depending upon quantity of accelerator used
- The use of an accelerator permits work to take place at lower temperatures
- Tenacious adhesion to both wet and dry surfaces
- Excellent elongation creates tight seal in moving cracks
- Contains no volatile solvents
- ANSI/NSF Standard 61 approved for contact with potable water
- Non-corrosive

ENVIRONMENTAL INFORMATION

- Conformity with LEED®v4 MR Credit (Option 1): Building Product Disclosure and Optimization - Material Ingredients

PRODUCT INFORMATION

CSC MasterFormat®	**03 64 00 | INJECTION GROUTING**
Packaging	**SikaFix® HH LV:** 18.9 L (5 US gal.) pail **SikaFix® HH Accelerator:** 473 mL (16 US fl. oz) can, 8/case **SikaFix® Pump Flush:** 18.9 L (5 US gal.) pail
Colour	**SikaFix® HH LV:** Amber **SikaFix® HH Accelerator:** Transparent liquid
Shelf Life	1 year in original, unopened packaging.
Storage Conditions	Store in a dry area between 4 and 32 °C (40 and 90 °F) using original re-

sealable containers. Do not allow product to freeze. Low temperatures will affect viscosity. To minimize this effect, store the product at room temperature for a minimum period of 24 hours prior to use. Material must be preconditioned to temperatures ranging between 16 °C and 32 °C (60 °F and 90 °F) before use. If site temperatures are extremely low, heat bands or heated water baths may be used on the pails, before and during use to maintain the products temperature. Immerse only the lower 2/3 of the pails. Avoid splashing water into open containers. Do not use if ambient temperature is below 4 °C (40 °F).

Density	**Uncured**	**Cured**	**SikaFix® HH Accelerator**	(ASTM D1622)
	1.15 @ +23 °C (74 °F)	0.064 kg/L (4 lb/ft³)	0.95 @ +23 °C (74 °F)	
	Specific Gravity:			
	Cured SikaFix® HH LV (+SikaFix® HH Accelerator)	1.8 kg/L (4 lb/US gal.)		(ASTM D1622)
Flash Point	**Uncured SikaFix® HH LV**	> 93 °C (> 200 °F)		(ASTM D93)
	SikaFix® HH Accelerator	102 °C (216 °F)		(ASTM D3278-96)
Viscosity	**Uncured SikaFix® HH LV**	**SikaFix® HH Accelerator**		(ASTM D1638)
	500 cps @ +23 °C	25 cps @ +23 °C		

TECHNICAL INFORMATION

Tensile Strength	0.02 MPa (29 psi)	(ASTM D638)
Elongation at Break	44 %	(ASTM D638)
Lap Shear Strength	0.12 MPa (17 psi)	(ASTM C273)
Expansion	Shrinkage: <1 % Absorption: <1%	(ASTM D1042) (ASTM D2842)

APPLICATION INFORMATION

Mixing Ratio	**Dosage:** **SikaFix® HH Accelerator** 1 - 3 % Accelerator 10 - 30 mL (1.3 - 3.9 US fl. oz) can per L (33.8 US fl. oz) of grout (typical)
Yield	**SikaFix® HH LV** 1 L (33.8 US fl. oz) grout = approx. 25 L (6.6 US gal.) foam (typical free expansion) 1 L (33.8 US fl. oz) grout = approx. 2 - 5 L (0.5 - 1.3 US gal.) foam (typical contained expansion) Dependent upon quantity of Accelerator used and variation in crack/void configuration, injection conditions and end use will influence the yield
Ambient Air Temperature	Maximum: +82 °C (180 °F)
Substrate Temperature	Maximum: +82 °C (180 °F)

Curing Time

Temperature	Reaction/Gel Time (Accelarator % dosage)
+10 °C (50 °F)	3 min 10 s (2.5 %) 12 min 0 s (0 %)
+20 °C (68 °F)	1 min 50 s (2.5 %) 6 min 15 s (0 %)
+25 °C (77 °F)	1 min 15 s (2.5 %) 5 min 10 s (0 %)
+30 °C (86 °F)	1 min 05 s (2.5 %) 4 min 0 s (0 %)

Based on a 2.5 % SikaFix® HH Accelerator dosage, corresponding with the recommended 18.9 L : 473 mL ratio of SikaFix® HH LV to SikaFix® HH Accelerator, and a 0 % dosage, corresponding with no SikaFix® Accelerator added. SikaFix® HH Accelerator must be agitated by shaking the container prior to use.

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.
Properties tested at +23 °C (73 °F) and 50 % R.H. unless stated otherwise.

LIMITATIONS

- SikaFix® HH LV is best installed by skilled and experienced applicators, especially in instances where water infiltration is under pressure. Consult Sika Canada for advice and recommendations.
- Low temperatures will significantly affect viscosity; if **SikaFix® HH** Accelerator is allowed to freeze, it will lower performance of the product.
- Avoid splashing water into open containers, as material is water activated.
- Water used to activate SikaFix® HH LV must be in a pH range of 3 - 10 for optimum foam quality.
- Do not exceed +30 °C (80 °F) when warming material.

ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

Drill appropriate diameter holes based on packer type/diameter being used along the side of the crack at a 45° angle to intersect the crack midway through the substrate. These holes should be drilled alternately on opposite sides of the crack at approximately 150 - 600 mm (6 - 24 in) centres depending upon the crack width. This spacing can be adjusted to suit specific applications where necessary. Install injection packers into the drilled holes and tighten or position and secure injection ports. It is always necessary to flush the drilled holes with water to remove debris and drill dust from the holes and crack. This will also insure that the crack is wet enough to react with the grout when it is injected into the crack. When the crack is contaminated on the outside, it will be necessary to clean the surface so that the crack can be located exactly. If the crack is wide or high water flows are encountered, it will be necessary to seal the surface of the crack with a surface sealing material (SikaSet® Plug, Sikadur®-31 Hi Mod Gel[CA] or a preformed open cell polyurethane foam cord saturated with SikaFix® HH LV: select material compatible with potable water where necessary). The surface sealing can be carried out before or after drilling injection holes, depending on the particular situation.

MIXING

Prior to injection, SikaFix® HH LV should be thoroughly agitated by either vigorously shaking the 18.9 L (5 US gal.) pail or by mixing with a low-speed drill (200 - 300 rpm) and *Jiffy* or 'bung' type paddle until a uniform consistency is produced. If mixing, scrape the sides and bottom of the pail to ensure a complete mix is achieved. Prior to using **SikaFix® HH Accelerator**, the can should be shaken vigorously as the contents may have settled during storage. For normal use, the grout should not be used with more SikaFix® HH Accelerator than the amount recommended in the Curing Time data. The grout should never be used with a SikaFix® HH Accelerator content exceeding 5 %. Excess acceleration will cause uncontrolled expansion which is prone to shrinkage.
Pour the desired quantity of SikaFix® HH LV into a clean, suitably sized mixing vessel and where SikaFix® HH LV Accelerator is being used, measure the amount of accelerator required and add into the SikaFix® HH LV

and stir until adequately mixed. It is advisable to mix and inject just a part of the unit initially (1L [2 pints] would be approximate) to determine the rate of resin travel and confirm how much product can be used within its pot life.

APPLICATION METHOD / TOOLS

Injection: Injection of the grout (with or without accelerator) is then carried out, starting at the lowest packer or port installed on a vertical crack and working upwards, or at the first packer or port flushed for a horizontal crack and moving forwards. As SikaFix® HH LV moves into the crack or void, water is displaced ahead of it. Continue injecting until all the water exits and the grout appears at the adjacent packer hole. Stop injecting and move to the next packer/port in the adjacent hole. Insert and tighten tighten the zerk fitting into packers or caps into ports, moving the injection hose to the second packer/port and start injecting once again. Continue the process until 3 - 4 packers or ports have been grouted. Disconnect and go back to the first packer/port and inject all the packers or ports for the second time. Some packers/ports may take additional grout, which will fill up and further densify the material in the crack. Continue this process until the length of the prepared crack is injected.
Note: Injection pressure will vary from 1380 - 17240 KPa (200 - 2500 psi) depending on the width of the crack, thickness and condition of the substrate.
Finishing: When finished with the injection process, re-inject each installed packer/port with a small quantity of water. This will react with the resin left in the drill hole. After the injection, the packers or injection ports can be cut flush with the concrete surface or can be removed from the injection holes. Let SikaFix® HH LV completely cure before removing the packers/ports. Packer/port holes can be filled with Sikadur®-31 Hi Mod Gel[CA] or SikaSet® Plug potable water compatible where necessary) and trowelled smooth.
Removal: Residual resin that has foamed from the crack can be removed with a scrapper provided that is not cured to a solid on the surface. If the material has cured, remove with a wire brush or hand held grinders.SikaFix® HH LV will aggressively bond to concrete surfaces.
Storage Conditionning: Store in a dry area using original resealable containers. Low temperatures will affect viscosity. To minimize this effect, store the product at normal room temperature for a minimum period of 24 hours prior to use. If site temperatures are extremely low, heat bands or heated water baths may be used on the pails, before and during use to maintain the products temperature. Immerse only the lower 2/3 of the pails. Avoid splashing water into open containers.

CLEAN UP

Use SikaFix® Pump Flush, a non-flammable solvent, to clean tools, lines and equipment of uncured product. Cured material can only be removed mechanically.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

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 recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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 or may be downloaded from our website at: www.sika.ca

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