

BUILDING PRODUCT INFORMATION SHEET

Cavex[®]

EXPANSION AGENT FOR MASONRY INFILL AND GROUT INJECTIONS

DESCRIPTION

Cavex[®] is an expansion agent containing a blend of aluminium powder and other ingredients and is used in cement grouting situations wherever a controlled expansion to compensate for water loss and plastic settlement is required. Cavex[®] has been formulated for use in Portland cement grouts and masonry blockfill to provide expansion after placement of grout, before initial set occurs.

USES

Cavex[®] is ideal for all types of cement based grouts where a post placement volume increase of the wet mix is desirable to maintain adhesion to all adjacent surfaces. Applications range from neat cement / water grouts through to masonry blockfill. Typical uses are:

- Ready mixed grout for blockwork, brickwork cavities
- Neat cement grouting for cable ducts, ground anchors, stabilisation work, etc.
- Sand / cement mixes for grouting behind tunnel linings, pipe sleeves, etc.

FEATURES

- Eliminates plastic settlement in the grouting mix
- Produces a controlled expansion before initial setting. As porous masonry blocks absorb water from the grout the plastic expansion maintains a contact pressure at the interface until the blockfill starts setting. The blockfill can then bond with the masonry unit to become a composite structure
- Provides improved bond between hardened masonry blockfill and both the reinforcement and inner surfaces of the masonry cells
- Provides a volume increase to wet mixes - helping to fill voids in tunnel linings, cable ducts, etc.
- Eliminates the need for revibration - enabling grout lift height limitations to be relaxed, as allowed for in the NZ Masonry Filling Standards
- Produces a stable and plastic grout - prevents the upward movement of bleedwater which would otherwise become trapped underneath the lower faces of reinforcement and other projections.

PRODUCT INFORMATION

Product identifier	Cavex [®]
Place of manufacture	Aotearoa New Zealand
Packaging	800 g pots
Shelf life	Six (6) months when stored according to stated conditions.
Storage conditions	Store in unopened, original containers in cool dry conditions below +25°C.
Appearance and colour	Silver grey powder
Total chloride ion content	Nil

TECHNICAL INFORMATION

Indicative performance of mortar mix	TYPICAL VOLUME EXPANSION OF BLOCKFILL: Approx. 4 - 5 % (Determined by measuring the rise of the upper level of blockfill in a glasscylindrical mould)
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APPLICATION INFORMATION

Recommended dosage	Ready Mixed Blockfill: Use 800g of Cavex [®] for each m ³ of masonry blockfill
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Ambient air temperature

APPLICATION TEMP: +5°C to +30°C. Temperatures above 30°C will significantly increase volume change

MANUFACTURER AND IMPORTER INFORMATION**Manufacturer information**

Address	Sika (NZ) Limited 85-91 Patiki Road Avondale, Auckland 1026 New Zealand
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NZBN	9429000018791

BUILDING CODE INFORMATION**Building Code clauses**

Note: This product on its own is not within the scope of the NZ Building Code. It is an additive / admixture for use in the manufacture of concrete, to enhance its performance properties in either its plastic or hardened state. When added to concrete that must comply with the NZ Building Code, and it used in accordance with Sika's technical literature, it will contribute to meeting the requirements of the following clauses:

B1 Structure: Performance Clauses B1.3.1, B1.3.2, B1.3.3 (a, b, f, h, m, q) B1.3.4

B2 Durability: Performance clause B2.3.1-(a) not less than 50 years

F2 Hazardous Building Materials: Performance clause F2.3.1

Building Code compliance statements

Performance B1.3.1, B1.3.2, B1.3.3 (a, b, f, h, m, q), B1.3.4: This product meets the requirements of AS1478.1 Chemical Admixtures for Concrete, Mortar and Grout. When added to concrete during the production phase it contributes to the hardened concrete meeting loading requirements arising from self-weight, imposed gravity loads, earthquake, wind impact, and the effects of creep and shrinkage over time.

Performance B2.3.1 (a) 50 years: This product meets the requirements of AS1478.1 Chemical Admixtures for Concrete, Mortar and Grout. When added to concrete, mortar or grout during the manufacturing process it helps the hardened concrete to achieve its durability requirements and to remain serviceable for 50 years, or more. According to Sika's "Service Improvement" records, maintained within its ISO9001:2015 Quality Management System, this product has performed successfully since it was introduced in 1998.

Performance F2.3.1: This product meets this requirement when used and applied in accordance with Sika's installation instructions and does not present a health hazard to people occupying or using the building. Refer to the Sika Product Technical Data sheet and product Safety Data Sheet nzl.sika.com for further information if required

BASIS OF PRODUCT DATA

All technical data in this document are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

- Concrete masonry infill grouts should have a spread value >450 mm before the introduction of Cavex®
- Specimens of blockfill for compressive strength testing must be prepared in moulds with a top plate that provides effective restraint to expansion. Compressive strength of specimens formed in these moulds is not significantly reduced

- Expansion will not occur at temperatures below 5°C
- All placing and consolidation work should be completed within 60 minutes at temperatures <15°C and within 45 minutes above 15°C
- Restraint of plastic blockfill (containing Cavex®) will be required along the top face of the blockwork to allow for effective expansion to occur
- When using Cavex® in a 'stacked block' system, it is important to ensure that the 'columns' of blocks at each end of the wall are well supported with props and braces (in the plane of the wall).

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

DESIGN REQUIREMENTS

Design requirements for concrete that contains Sika admixtures, or other concrete additives are the responsibility of the ready mixed concrete producer and/or the concrete design engineer.

MIXING

Suitability: For all types of Portland cement based grouts and injections. **Compatibility with other Sika Admixtures:** More effective when used in conjunction with water reducers. Retarders, accelerators or air entrainers should not be used without undertaking trials.

Ready mixed blockfill (Grout):

- Cavex® should be added to the mix in the truck just prior to placement to ensure that the reaction period for the admixture is not exhausted before the grout is placed
- Bring the blockfill mix back to the top of the bowl until it is easily accessible. Empty the predetermined dosage onto the surface of the mix
- The mix should then be agitated for 5 minutes to ensure complete and thorough distribution of the Cavex® has been achieved.

Site based cement/water grouts and injections:

- Wherever possible the required dosage of Cavex® should be premixed with the gauging water just prior to the mixing of the grout.
- Alternatively the Cavex® can be added directly to the dry cement or cement / sand mixture.
- The grout mixture must be continuously stirred prior to and during placement

MAINTENANCE REQUIREMENTS

Once added the Sika admixture / additive becomes an integral part of the hardened concrete, mortar or grout. Refer to the supplier of that product for their maintenance instructions.

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 the 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 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.

The building product/building product line is not subject to warning or ban under section 26 of the Building Act 2004.

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NZ BUILDING PRODUCT INFORMATION SHEET

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