

# Sika® Sigunit®-39 AF

## Powdered Alkali-Free Setting Accelerator for Shotcrete

**Description** Sika® Sigunit®-39 AF is an alkali-free setting accelerator for dry-mix shotcrete in powder form.

**Where to Use** Sigunit®-39 AF is especially formulated for use as setting accelerator in Portland cement based mortars and concrete. The product is particularly suitable for:

- Applications, where high initial strength is needed and/or the shotcrete must play a supporting role in the early stage
- Dry-mix shotcrete for tunnel repairs, heading stabilization in tunneling, slope and trench stabilization etc.

**Advantages** The benefits of Sigunit®-39 AF include, but are not limited to the following:

- Fast cement setting
- High early strength development of shotcrete
- Lower rebound during application
- Improved bond of shotcrete to rock and concrete, making overhead spraying easier
- Minimum strength loss in the accelerated concrete
- Sigunit®-39 AF is non corrosive to steel reinforcement
- Alkali-free, which eliminates any adverse effects from additional alkali in the spray dust
- No additional surface and ground water pollution by leached-out alkali

### Typical Data

|                                                     |                                                                                                                          |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Packaging</b>                                    | 25 kg bags, 40 bags on a pallet = 1000 kg                                                                                |
| <b>Colour and Form</b>                              | White powder                                                                                                             |
| <b>Shelf Life and Storage</b>                       | 2 years shelf life from date of production if stored dry and properly in undamaged, unopened, original sealed packaging. |
| <b>Properties</b>                                   |                                                                                                                          |
| <b>Chemical Base</b>                                | Mineral-based, alkali-free powder                                                                                        |
| <b>Bulk Density</b>                                 | 0.80 ± 0.1 g/cm <sup>3</sup>                                                                                             |
| <b>pH-Value (100 g/L H<sub>2</sub>O)</b>            | 3.5 ± 0.5 at +23 °C (100 g/LH <sub>2</sub> O)                                                                            |
| <b>Total Chloride Ion Content</b>                   | ≤ 0.10 %                                                                                                                 |
| <b>Equivalent Sodium Oxide as % Na<sub>2</sub>O</b> | ≤ 1.0 %                                                                                                                  |

*All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond Sika's control.*

### How to Use

**Dosage** Typical dosage in the range of 2 to 6 % of the binder weight. The maximum dosage should not exceed 6 % of the binder weight. The water-binder ratio should be below 0.5 to ensure durability and ultimate strength required. The addition of water-reducing additives (Sika® ViscoCrete® Powder) is recommended.

**Note:** Preliminary testing is required to determine the exact dosage for your specific conditions. Please contact your Sika Canada Technical Sales Representative for more information and advice.

### Dispensing / Mixing

Sigunit®-39 AF is added to the dry mix in the drymix mortar plant. Alternatively, it can be added to the dry mortar/concrete premix at the construction site prior to feeding the spray equipment (rotor machine).



**Cleaning of Tools** Use personal protective equipment (chemical resistant goggles/gloves/clothing). Clean all tools and application equipment with water immediately after use.

**Notes on Application / Limitations** The acceleration effect is dependent on the cement (content, type and age), the shotcrete and substrate temperatures, layer thicknesses and the spray process. In dry spraying, the quantity of mixing water is an important criterion, also relevant for the accelerating effects of Sigunit®-39 AF.

When applying shotcrete in thicker layers, make sure that the temperature of the basic concrete is not below +15 °C. Lower temperatures require a higher dosage of the accelerator.

Support is available from your Sika Canada Technical Sales Representative.

**Compatibility** Sigunit®-39 AF may be combined with Sika® ViscoCrete® Powders for water reduction.

**Important:** Always conduct trials before combining products in specific mix designs and contact your Sika Canada Technical Sales Representative for any additional information and advice concerning specific combinations with other products.

**Health and Safety Information** For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent SAFETY DATA SHEET containing physical, ecological, toxicological and other safety-related data.

KEEP OUT OF REACH OF CHILDREN  
FOR INDUSTRIAL USE ONLY

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, within their shelf life. 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 proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under [www.sika.ca](http://www.sika.ca).



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