

## PRODUCT DATA SHEET

# SikaCem®-135 Intraplast®

Aluminium free expanding grout admixture for cementitious injection grout

## DESCRIPTION

SikaCem®-135 Intraplast® is a ready to mix expanding grout admixture in powder form for injection grouting. It is aluminium free and does not produce hydrogen on reacting with water. It is non-toxic, non-flammable and does not contain chlorides or other ingredients of corrosive nature. It is used to increase fluidity and cohesion in cement grouts (addition of sand is possible) without any segregation and to develop non-shrink property. By introducing micro bubbles into the concrete mix, it produces wet volume expansion and hence is widely used for cable grouting. Suitable for use in hot and tropical climatic conditions.

## USES

SikaCem®-135 Intraplast® is mainly used for injection and grouting work where tight filling and strong interface bond is required such as for:

- Anchor grouting
- Pre-stressed cable ducts
- Crack injection
- Rock and soil anchoring

- Pre-placed aggregates
- Tunnel linings
- Bearing plates
- Soil or concrete consolidation
- Pre-cast concrete elements

## FEATURES

The cement grout containing SikaCem®-135 Intraplast® has following advantages:

- Good compressive and bond strengths
- Improved fluidity
- Increased cohesion
- Volume expansion in the wet state to develop non shrink property
- No chloride or other ingredients of corrosive nature
- Non-toxic and non-flammable
- Prevents premature setting
- Reduces the amount of gauging water
- No bleeding
- Initially retarding
- Free from aluminium powder, no hydrogen produced

## PRODUCT INFORMATION

|                       |   |
|-----------------------|---|
| Composition           | Mixture of selected dispersing and expanding agents   |
| Packaging             | 200 g pouch and 25 kg bag   |
| Appearance and colour | Brown powder  |
| Shelf life            | 12 months from date of production   |
| Storage conditions    | The product must be stored properly in dry conditions in undamaged and unopened original sealed packaging at temperatures between +5 °C and +35 °C. Protect from direct sunlight, heat and moisture. Any opened pack should be packed properly after use and consumed within one month. |
| Product declaration   | Typical mix design of cement grout admixed with SikaCem®-135 Intraplast® conforms to: <ul style="list-style-type: none"><li>▪ MORTH 5th Revision Appendix 1800/III</li></ul>  |

## TECHNICAL INFORMATION

|  |   |                 |                  |
|--|---|-----------------|------------------|
| Specific advice                                    | Use Ordinary Portland Cement (OPC)  |                 |                  |
| Mortar mix design                                  | IMPORTANT   |                 |                  |
|  | Design mixes should always be tested to verify satisfactory performance, specifically as it relates to strength, bleed, flow and segregation.   |                 |                  |
|  | TYPICAL MIX DESIGN  |                 |                  |
|  | OPC   |                 | 50 kg            |
|  | SikaCem®-135 Intraplast®  |                 | 0.2 kg           |
|  | Water   |                 | Max. 22.5 kg     |
| Indicative performance of mortar mix               | IMPORTANT   |                 |                  |
|  | The properties of the injection grout can be significantly influenced by the mixing procedure, cement properties, addition of water, addition of sand and temperatures. For type of application, it is necessary to determine the most suitable procedure by means of preliminary site tests. |                 |                  |
|  | IMPORTANT   |                 |                  |
|  | Different cement would show different expansion, field testing should be conducted to determine the most effective dosage rate.   |                 |                  |
|  | Property of grout   | Value           | Standard         |
|  | Water : Cement  | 0.45 (Max.)     | -                |
|  | Compressive strength, 7 d, +30 °C, 100 mm cube  | 28 N/mm²        | IS : 1343        |
|  | Compressive strength, 28 d, +30 °C, 100 mm cube   | 42 N/mm² (Min.) | IS : 1343        |
|  | Initial setting   | 5.75 h          | IS : 4031 Part 5 |
|  | Final setting   | 10.33 h         | IS : 4031 Part 5 |
|  | Bleeding, 3 h   | 0.25 % (Max.)   | ASTM C940        |
|  | Volume change, 3 h  | 2.1 %           | ASTM C940        |
|  | Initial fluidity (Flow cone)  | 31 s            | ASTM C939        |
|  | Initial fluidity (Marsh cone, 1 L)  | 21 s            | FIB BULLETIN 20  |
|  | Initial fluidity (J <sub>14</sub> funnel)   | 7 s             | JSCE-F 541-1999  |
| Reduction in water consumption compared to control | 4 %   | ASTM C939       |                  |

## APPLICATION INFORMATION

|                         |   |
|-------------------------|---|
| Recommended dosage      | 0.4 % by weight of cement (200 g per 50 kg bag of cement)<br>(Exact dosage rates depend on the quality of cement, water/cement ratio and ambient temperature. Therefore, in many cases it is advisable to carry out trial mixes.) |
| Ambient air temperature | +5 °C min. / +40 °C max.  |

## 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.

## FURTHER DOCUMENTATION

Refer to MORTH 5th Revision Appendix 1800/III

## ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, stor-

age 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

### MIXING

#### IMPORTANT

Typical water-cement ratio 0.35 to 0.45

#### IMPORTANT

The mortar temperature should not exceed +25 °C. Use chilled water in hot climates for mixing.

#### IMPORTANT

Do not add water to the grout to increase any flowability which has been lost by delayed use of grout.

#### IMPORTANT

For efficient mixing of grouts, use a colloidal mixer. In large volume grouting, install an agitator tank beside the colloidal mixer to hold the grout before grouting.

#### IMPORTANT

Do not add sand when using the product in prestressing.

1. Water should be added to the mixer first, followed by Portland-cement and then admixture. Add sand where required.
2. Using low speed high shear mechanical stirrer, mix thoroughly as to obtain a uniform, thoroughly blended grout, without excessive temperature increase.

### APPLICATION

#### IMPORTANT

SikaCem®-135 Intraplast® is essentially a product for use by specialists working in the field of pre-stressing and grouting techniques.

#### IMPORTANT

All pumps and hose fittings should be absolutely watertight to prevent loss of water and subsequent clogging.

#### IMPORTANT

In order to make maximum use of the expansion, use the mixture within 30 minutes. The batch size must be limited accordingly.

#### IMPORTANT

Do not use as non-shrink admixture for conventionally placed concrete.

### FORMING

- Where areas to be grouted require forming, forms should be tight and well fitted.
- When using SikaCem®-135 Intraplast®, expansion of the grout should be restrained in order to produce the highest possible density, bond and strength.
- Top forms should be used where there are open areas. Note: Unformed, exposed grout placements will have substantially lower physical characteristics.

### PLACING

The normal means of placing and pumping of grouting material should be used to ensure a continuous flow.

### CLEANING OF EQUIPMENT

Clean all tools and application equipment with water immediately after use. Hardened material can only be mechanically removed.

## 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.

## 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.

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#### Product Data Sheet

SikaCem®-135 Intraplast®  
October 2025, Version 02.01  
020301010020000072

SikaCem-135Intraplast-en-BD-(10-2025)-2-1.pdf