

# INJECTION

## Sika iSystem

CONTROLLED RHEOLOGY AND GROUT SPREAD IN THE ROCK APERTURES.  
THE SETTING TIME CAN BE ADJUSTED WITH MAINTAINED PENETRATION ABILITY.

BUILDING TRUST



# Sika iSystem

**SIKA IS THE DISTRIBUTOR** of the micro fine cements produced by Cementsa and has developed a new generation of admixtures which, together with the micro fine cements are named Sika iSystem. With Sika iSystem, a grout with a performance in accordance with the technical project specifications can be obtained.

## MICRO FINE CEMENTS

### Sika® Injektering 30

A low-alkali injection cement based on Portland cement. Max particle size ( $d_{95}$ ) is 30  $\mu\text{m}$ .

### Sika® Microfine 20

An injection cement CEM II/A-V 52,5 N. Max particle size ( $d_{95}$ ) is 20  $\mu\text{m}$ .

### Sika® Ultrafin 12

A low-alkali injection cement based on Portland cement. Max particle size ( $d_{95}$ ) is 12  $\mu\text{m}$ .

## THE NEW GENERATION OF ADMIXTURES

### Sika® iFlow-1

An effective dispersing admixture for injection cement. By varying the dosage of Sika iFlow-1 the yield point and the viscosity can be adjusted to obtain requested rheology.

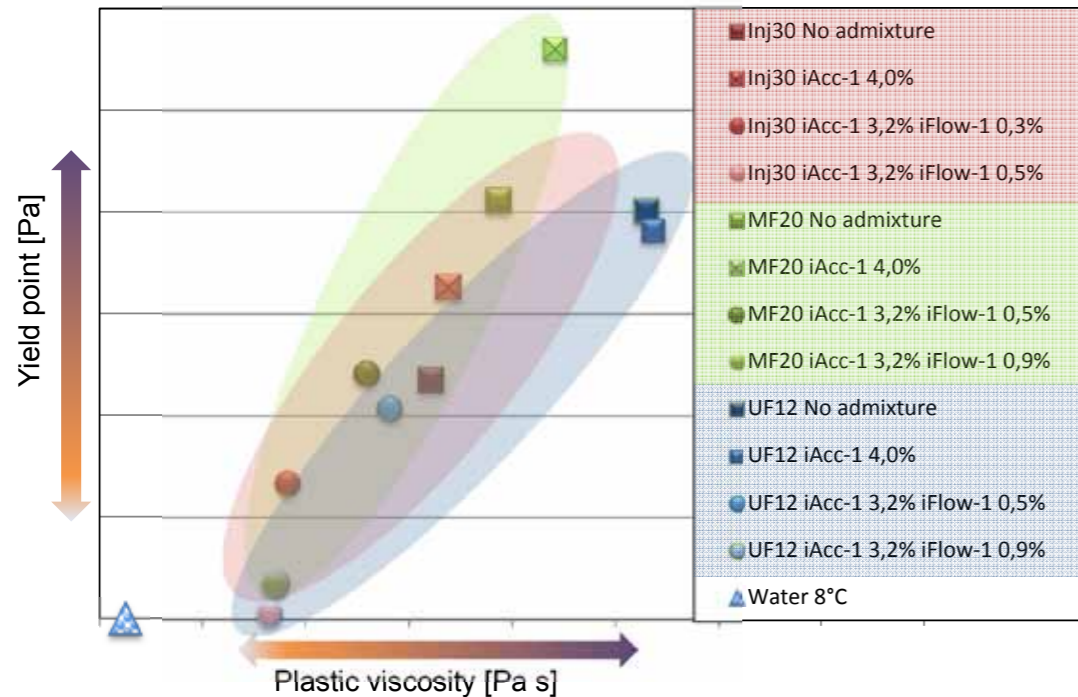
### Sika® iAcc-1

A chloride-free setting time accelerator for injection cement. By varying the dosage of Sika iAcc-1 the setting time can be adjusted without affecting the filter properties of the grout.

Included in the Sika product range for cement based injection is also the previous generation of admixtures, SetControl II, is a setting time accelerator, and HPM, a water reducing admixture.

## RHEOLOGICAL PROPERTIES

The rheology of the grout, that is the yield point and the plastic viscosity, affects the spread of the grout in the aperture of the rock. By using Sika iFlow-1 the rheology of the grout is adjusted in accordance with the technical specification in the project.



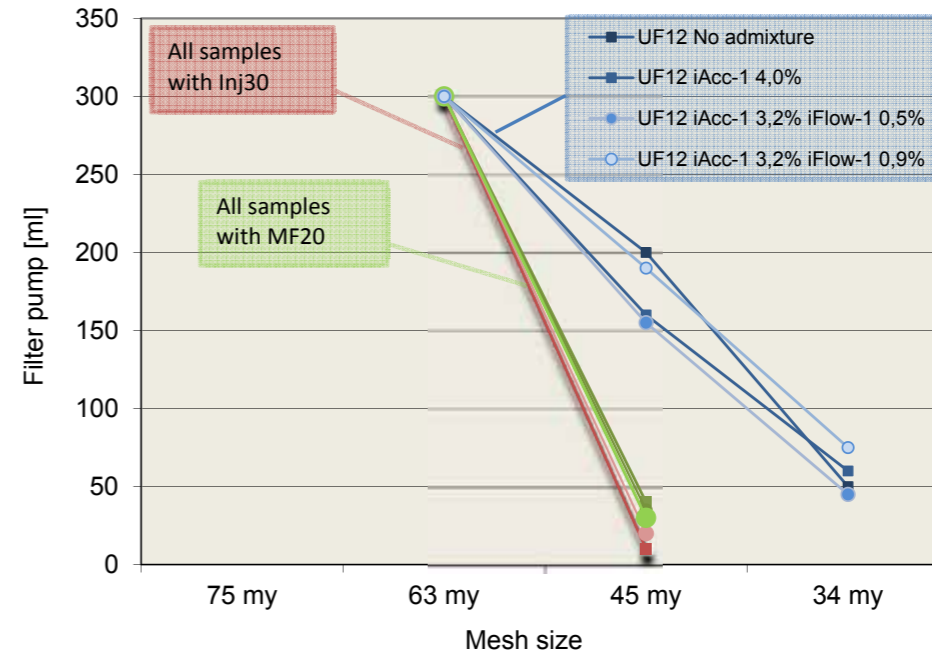
iFlow-1 is adjusting the rheological properties of grout based on all of the micro fine cements. iAcc-1 shortens the setting time while, in combination with iFlow-1, low viscosity and yield point can be obtained.

In all graphs presenting lab results grouts based on Inj30 are mixed with w/c-ratio 0,8 while grouts based on MF20 and UF12 are mixed with w/c-ratio 1,0 due to differences in specific surface and thus water demand.

# GROUT PROPERTIES WITH Sika iSystem

## FILTER PROPERTIES

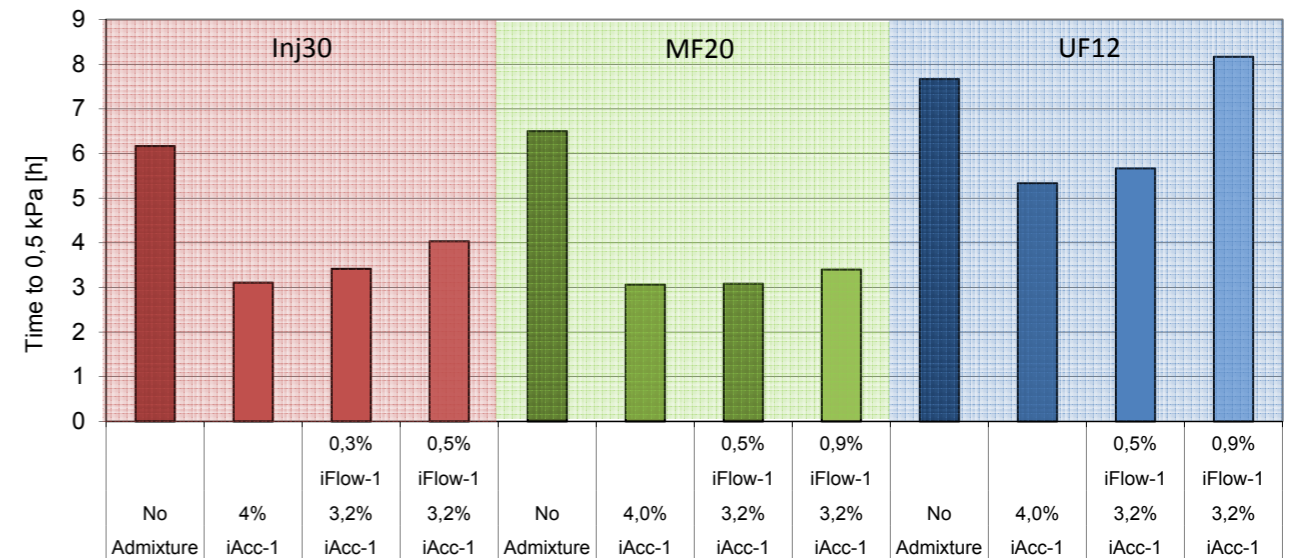
The filter properties of the grout affect the ability of the grout to penetrate the crack aperture. Injection cements are very finely ground particles with high electro static charge creating attraction between the particles which makes them tend to agglomerate. This may cause clogging at the crack aperture which prevents the grout spread in the crack. By using iFlow-1 which effectively disperse the cement particles from each other a grout with good filter properties and with reduced risk of clogging can be obtained.



By adequate dispersion good filter properties are obtained in grout based on all of the micro fine cements and based on UF12 a grout for high demands on penetration into cracks with small crack width is obtained. Good dispersion is obtained by high dispersing effect on the mixing equipment and by adding iFlow-1 into the grout mix.

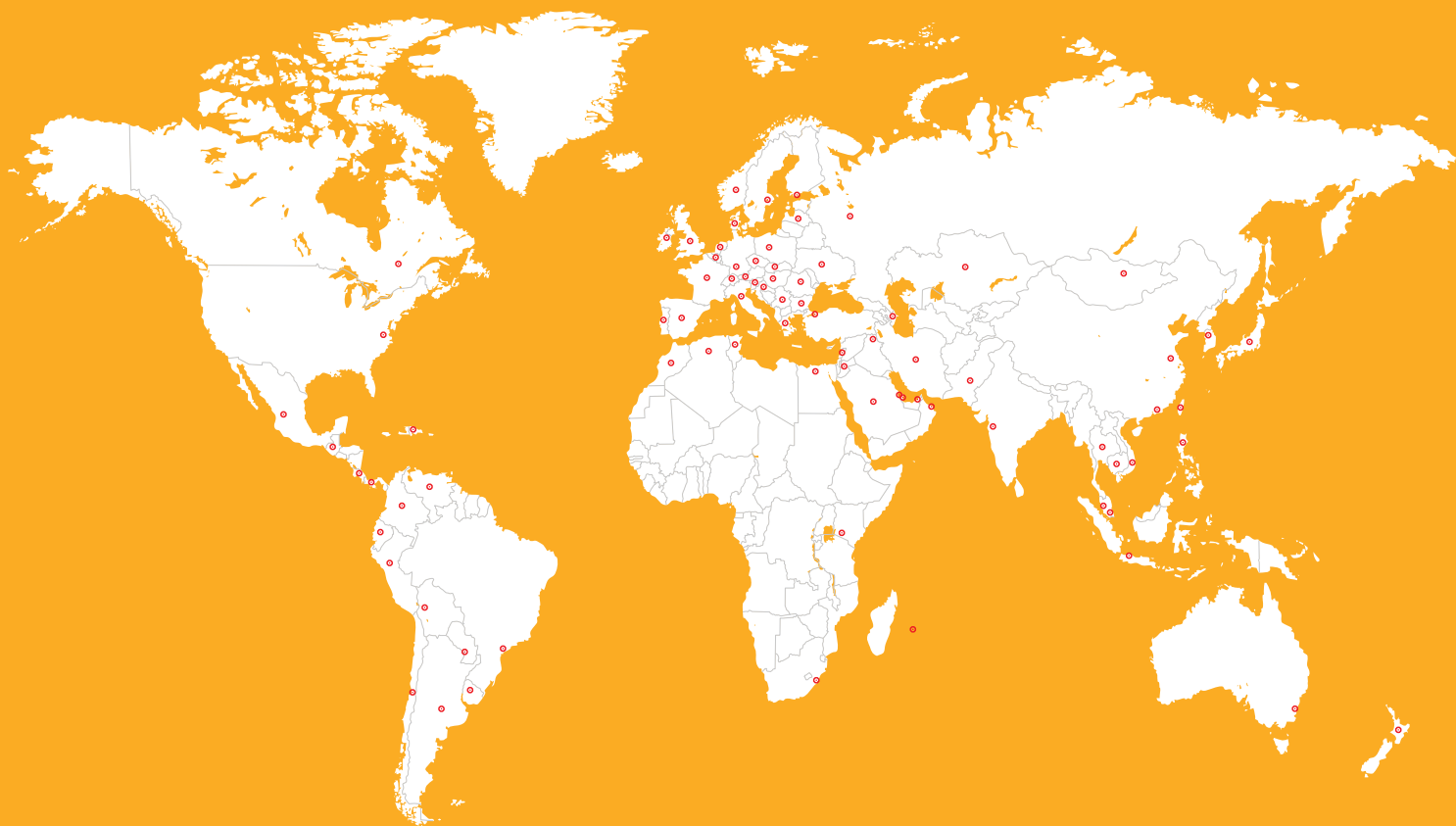
## STIFFENING

By combining iFlow-1 and iAcc-1 in the grout mix a shortened stiffening time, and at the same time very low yield point and viscosity, can be obtained.



Stiffening time of the different cements, without and with different dosages of admixtures, measured by penetration cone.

# GLOBAL BUT LOCAL PARTNERSHIP



## MORE INFORMATION



### PLEASE CONTACT

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Sika Sverige AB, a part of the global group Sika AG, is a leading supplier of specialty chemical products.

Sika provides solutions, systems and products to the construction, building and manufacturing industries and is a leading supplier of materials that are used for sealing, bonding, damping, reinforcing and protecting.

Sika's product range consists of high quality concrete admixtures, mortars, sealing & bonding, damping and reinforcing materials, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply.  
Please consult the Data Sheet prior to any use and processing.



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