



## Product information

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### Denka SC-1

**Accelerator  
for fast setting and fast hardening cement-based products.**

#### Description

Denka SC-1 is an amorphous Calcium Aluminate Cement (ACA) and was developed to accelerate the setting time and early strength of cement-based products.

The basis of Denka SC-1 is an amorphous clinker. The amorphous form and its composition give a much higher reactivity than a crystalline form. In combination with Portland cement a higher reactivity and efficiency is obtained.

#### Chemical composition (M.-%, approx.)

Al <sub>2</sub> O <sub>3</sub>	22 – 25
CaO	39 – 45
SO <sub>3</sub>	26 – 30

#### Physical composition

Appearance	off white powder with good flow and dispensing properties.	
Specific density	2.9 – 3.1	g/cm <sup>3</sup>
Specific surface (Blaine)	5000 – 7000	cm <sup>2</sup> /g

#### How it works

The reaction of ACA with anhydrite and water leads to the formation of ettringite. With the comparatively higher reactivity of ACA this reaction happens very fast. An acceptable open time needs the addition of suitable retarders. This allows the user to define the working time.

The ettringite formed is a stable compound and gives the structure increased stability. There will be no conversions that could lead to a loss of strength.

Given the use of enough water, the ettringite formed gives an increased volume. This leads to a chemical pre-stress and a reduced shrinkage on drying.

#### Advantages

Depending on the addition level

- fast and very fast setting time
- high and very high early strength
- low shrinkage
- increased durability
- good bonding properties
- ease of handling



## Applications

Denka SC-1 can be used in a variety of applications, such as

- repair mortars
- grouts
- water stop mortars
- tile adhesives
- flooring compounds

## Addition level

Properties depend on the Denka SC-1 to OPC ratio. Typical addition levels are 10 - 30% replacement by weight on the cement weight depending on the properties required. Due to the fast setting nature of Denka SC-1 it is highly recommended that laboratory trials should be carried out to determine the correct addition level and also to optimise the retarding/accelerating balance.

Adding too much Denka SC-1 will result in extremely rapid set times and very high early strengths.

Important - Denka SC-1 has extremely fast setting properties. Therefore, to achieve acceptable setting times, a suitable retarder will have to be incorporated at slightly higher levels than those normally recommended.

## Compatibility

Denka SC-1 is compatible with Portland cement and hydraulic binders, including ground blast furnace slag, fly ash and hydrated lime.

## Health & Safety

Denka SC-1 is alkaline and should be handled like cements. Avoid contact with skin or eyes and protective gloves and goggles should be worn. In case of contact with eye wash immediately with plenty of water. Refer to Material Safety Data Sheet for full details.

## Storage

Denka SC-1 is very sensitive to moisture and should be stored in cool, dry conditions.

## Packaging

In 25 kg bags (3 layers and PE liner), 40 bags per pallet,  
packed on one-way pallet, size 90 x 100 x 15 cm,  
or in big bags of 1000 kg (on request)

The above information and recommendations are based upon our experience and are offered merely for advice. They do not absolve the consumer from making his own tests. Responsibility for damage arising from the use of our products cannot be derived from the recommendations given. The observance of any intellectual property rights of third parties is the responsibility of the user in each case.

MDS Denka SC-1 2019