

# DENKA SC-1

Amorphous Calcium Aluminate-Based Quick Hardening Additive

## Description

**DENKA SC-1** is an amorphous calcium aluminate-based accelerator used to achieve rapid setting times and high early strength in mortar and cement.

## Features

- Handling time can be adjusted to between 10 minutes and 1 hour by using general setting modifiers such as tartaric acid or dedicated setting modifier DENKA SETTER D-200
- Excellent initial strength (10~30MPa can be achieved in 3 hours)
- Excellent crack resistance
- Reduced self-shrinkage and drying shrinkage due to expansion characteristics

## Applications

- Self-leveling mortar
- Non-shrink grout
- Tile adhesive mortar
- Repair/rendering mortar
- Dry process shotcrete

## Packaging

- 20kg paper bags
- 1000kg bulk bags

## Shelf Life

- 12 months from production date
- Determine the production date by reference to the lot number. A lot number of "1AXXX" corresponds to production in Jan 2001; "2BXXX" to Feb 2002 and so on.

## Technical Information

Chemical composition		Physical properties	
CaO	42.6%	Appearance	White powder
Al <sub>2</sub> O <sub>3</sub>	29.7%	Physical state	Solid
SO <sub>3</sub>	24.9%	Odor	Odorless
		Specific gravity	2.90 – 2.96 g/cm <sup>3</sup>
		Blaine fineness	6,000 or more g/cm <sup>2</sup>
		pH	11 - 13 (dissolved)
		Water solubility	Partially soluble in water. Will solidify over a period of hours if moistened or wet

## Physical Properties (of Mortar)

General properties (typical values)

- Quick hardening additive (QHA): DENKA BEFORM, other CAC (Calcium aluminate cement)
- Retarding agent: DENKA SETTER D-200 for BEFORM, Tartaric acid for CAC
- Sand: ISO sand
- Water: Tap water
- Base mix proportion; Binder/Sand = 1.0/1.5, Water/Binder = 0.30
- Length change; uniaxial confined method, cured in water at 20°C after 1 day

OPC	Binder		Retarding agent (QHAX%)	Flow with 25 drops (mm)	Handling time(min)	Compressive strength (MPa)		
	QHA					3 hours	6 hours	1 day
	Product	Ratio						
100	—	—	—	153	300	—	—	32.0
85	SC-1	15	0.39 <sup>1</sup>	229	28	17.9	21.5	53.8
80		20	0.52 <sup>1</sup>	233	29	29.2	34.1	57.9
75		25	0.62 <sup>1</sup>	239	27	34.6	43.7	59.9
80	CAC	20	0.11 <sup>2</sup>	187	29	6.8	8.3	11.8
20		80	0.27 <sup>2</sup>	162	30	5.1	18.4	55.2
10		90	0.13 <sup>2</sup>	168	30	19.6	43.5	59.5

<sup>1</sup>DENKA SETTER D-200

<sup>2</sup>Tartaric acid

## Handling Precautions

- Refer to the Safety Data Sheet (SDS) before use.
- Wear protective gear (goggles, mask, gloves, and rubber boots) while handling the product. Do not dispose of the product in drains.
- Once opened, the product should be used up completely. Otherwise, reseal for storage.
- The product should be stored in a dry area, indoors, and out of direct sunlight.
- For further information, please contact DENKA.

## Limitation of Liability

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