

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

CaO	42.6%
Al ₂ O ₃	29.7%
SO ₃	24.9%

Physical properties

Appearance	White powder
Physical state	Solid
Odor	Odorless
Specific gravity	2.90 – 2.96 g/cm ³
Blaine fineness	6,000 or more g/cm ²
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 SC-1, other CAC (Calcium aluminate cement)
- Retarding agent: DENKA SETTER D-200 for SC-1, 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	229	28	17.9	21.5	53.8
80		20	0.52	233	29	29.2	34.1	57.9
75		25	0.62	239	27	34.6	43.7	59.9
80	CAC	20	0.11	187	29	6.8	8.3	11.8
20		80	0.27	162	30	5.1	18.4	55.2
10		90	0.13	168	30	19.6	43.5	59.5

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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