

Denka Natmic AF-S

Alkali-Free Liquid Accelerator for Sprayed Concrete Application

Description

Denka Natmic AF-S is an alkali-free accelerator for sprayed concrete that can be used for civil engineering works such as road and railways tunnels, headraces, and I mines. The accelerator is applied when initial rock support is needed or where a permanent lining will be placed.

Uses



Rock support in tunnels and mines



Slope stabilization



TBM Tunnel Linings

Advantages

- Quick setting time and high initial strength.
- Development of high compressive strength after 28 days and excellent long-term durability.
- Very low dust emissions.
- Very low rebound.
- Low alkali content (<1%)

Physical Properties

Colour/Form	White / Suspension
Density, g/cm ³	1.30 – 1.50
pH	1.0 – 3.0
Viscosity at 20°C (mPa s)	500 – 2000
Thermal Stability	+5 °C to +40°C
Alkali content (Na ₂ O equiv.%)	<1

Dosage and water to binder ratio

The dosage of **DENKA NATMIC AF-S** depends on the temperature, cement reactivity, setting time, strength development, and required thickness of the layers. The dosage of **NATMIC AF-S** ranges from 3 to 12% of the binder weight.

When **DENKA NATMIC AF-S** is used for wet-mix sprayed concrete, the water to binder (cement or cement plus fly ash and/or silica fume) ratio should be below 0.5 and preferably <0.45.

The dosage of the product should be optimized for the spraying process after spraying trials.

Packing Size

NATMIC AF-S	260kg / drum (185L)
	1200kg/tote tank (857L)

Cleaning

Wash all equipment with water after used.

Technical Support

Denka offers a technical support package to specifiers, end-user and contractors, as well as on site technical assistance.

Storage

DENKA NATMIC AF-S has a shelf life of 6 months in unopened containers, kept in a dry store. In high humidity locations, the shelf life may be reduced.

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Precautions

- Refer to the Safety Data Sheet (SDS) before use.
- Do not mix with other accelerators or chemical admixtures because chemical reactions may occur that cause the product to separate or precipitate. Particular care should be taken with nitrites, thiosulfates, and rhodanate compounds, which will generate poisonous gas when mixed with **DENKA NATMIC AF-S**.
- **DENKA NATMIC AF-S** should not be mixed with concrete containing blast furnace slag (BFS) as this will generate hydrogen sulfide.
- Protective wear (goggles, mask, gloves, and rubber boots) should be worn during handling.
- The dosing pump and other equipment should be acid-resistant because **DENKA NATMIC AF-S** is acidic.
- Do not dispose of **DENKA NATMIC AF-S** in drains.
- The product in open containers should be used up completely or the container should be resealed for storage.

Additional Information

Denka Construction Solutions Malaysia Sdn Bhd offers a wide range of complementary products, which includes waterstops, waterproofing products, grouts, anchors, specialized flooring products. In addition, a wide range of products formulated for repair and refurbishment of spalled concrete are available.

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