

RockAccel 51 (Accelerating Admixture)

Technical Datasheet

1. Description

RockAccel 51 is an alkali free accelerator especially used in the civil and underground construction industry for mainly Sprayed Concrete Application

2. Properties

Property	Value	Test Method
Form	Suspension	Intrinsic
Nature	Liquid	Visual
Specific Gravity @ 25°C	1420 ± 25 kg/m ³	ISO 758 ASTM C494
Colour	Beige	Visual
pH @ 20°C	2.5± 0.5	ISO 4316
Freezing point:	About -15°C	
Na ₂ O Equiv.	≤ 1.0%	EN 480-12
Chloride content	< 0.1%	En 480-10 ASTM D512

RockAccel 51 meets the requirements of EN 934-5 “Admixture for Sprayed Concrete” ASTM C1141 /C1141M “Standard Specification for Admixture for Shotcrete” and EFNARC “European Specification for Sprayed Concrete”

3. Packaging

Containers	1000 litres 200 litres 25 litres
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4. Directions for Use

Applications

- Shotcrete support in tunnels and mines
- Slope Stabilisation
- Shaft linings
- Acceleration of cementitious injection using an in-line mixer
- Segmental lining backfill grouting
- Plugging mortar production

Characteristics

- The unique product formulation provides fast hydration, continuous early strength development, high durability and long term strength
- None-aggressive properties provide improved working conditions
- Low dust generation during spraying
- Low rebound when using the correct nozzle angle and distance to strata
- Layer thickness up to a 150mm can be sprayed in hanging walls in one pass
- No negative affect on reinforcement steel
- No pollution of groundwater
- Minimal strength loss of accelerated concrete
- Can be used in the Drycrete process
- **RockAccel 51 is compatible with all makes of plasticizers, retarders and stabilizers**

Dosage

Typical dosing systems include mono pumps and peristaltic pumps

A 3% to 10% dosage of the product to the weight of cement is commonly used. Overdosing (>10%) may result in decrease of final strength.

RockAccel 51 is completely miscible in water. It must be added to the mixing water.

The optimum dosage of RockAccel 51 can only be established after trial tests, taking into account local conditions affecting the workability of the mix and the mechanical properties required from the concrete.

The substrate should always be clean and free from dust, loose particles and preferably damp. The use of fresh cement (PC/HPC) is recommended. RockAccel 51 also works well with blended cements.

In all cases it is strongly recommended to carry out preliminary tests to check setting and the 24h strength

Precautions

- Do not mix with acidic products.
- If frozen, refer to the RSS Mining technical department for information.
- The shelf life of RockAccel 51 is 18 months.

Tests

Example of results obtained according to the methods defined in the NF-EN 480-1 European certification. Type of concrete: Cement grade 42.5 (SSB: 3200 - 4000 cm²/g and C3A: 7-11%). Tests carried out for equal consistency. Setting performance guide when testing RockAccel 51 in cement paste with low w/c ratio @ 20°

	Initial set	Final set	Performance
RockAccel 51	<2min	<6min	Very Good
	2-4min	6-10min	Acceptable
	>4min	>10min	Poor

5. Safety and Storage

Always wear full PPE when using the product. For further information refer to MSDS or contact your local RSS Mining Representative. RockAccel 51 is classified as "Harmful". Whilst handling, it is obligatory to have skin and eye protection, to avoid prolonged inhalation of the fumes.

After the use of RockAccel 51, the dosing pump and all parts of the dosing system must be cleaned with portable water to provoke blockages the next time the system is used

RockAccel 51 should preferably be stored under cover in close containers out of the reach of sunlight and frost. Can be stored between (5° to 35°) max. Accelerators that are over its expiry date should not be used. Remixing and testing will be required after such a period. A shelf life of 6 months can be expected if stored correctly. RockAccel 51 should always be stored in stainless steel or plastic containers