

MasterRoc[®] SA 168

Formerly MEYCO SA 168

Alkali-free, liquid high performance set accelerator for sprayed concrete

Product description

MasterRoc SA 168 is a high performance alkali-free set accelerator for sprayed concrete, whose dosage can be varied to the desired setting and hardening times.

Fields of application

- Temporary and permanent ground support in tunnelling and mining
- Slope stabilization
- Also suitable for acceleration of cementitious grouts, such as for annulus grout in TBM tunnels, cemented ground injection and foam concrete.

Packaging

MasterRoc SA 168 is supplied in 210 litre drums, 1000 litre containers or in bulk.

Features and benefits

MasterRoc SA 168 is ideally suited for wet mix sprayed concrete for rock support:

- The quick setting property allows rapid work progress and the ability to construct thick sprayed concrete linings via layered application during one construction sequence.
- The unique product formulation provides fast setting, continuous early-age strength development high durability and good long term strength.
- Very low dust generation during application and therefore a good working environment.
- Possibility of low rebound applications when using the correct nozzle angle and distance.
- Non-aggressive properties provide improved working safety, reduced environmental impact and lower handling costs.

Technical data

Form	Suspension
Colour	Beige to white
Density (+20 °C)	1.45 ± 0.02 g/ml
pH value	3.0 ± 0.5
Viscosity ¹⁾	300 ± 150 mPa.s
Thermal stability	+5 °C to +35 °C
Chloride content	<0.1%
[Na ₂ O] EQV. (%bw)	<1%

¹⁾ Brookfield, + 20 °C. Viscosity is dependent on degree of product agitation and temperature.

Application procedure

The substrate should be clean and free from loose particles and preferably damp.

It is recommended to use only fresh cement as the age of the cement can influence the setting characteristics of the mix.

MasterRoc SA 168 has a low sensitivity to the type of cement. However, with some cements high dosages are necessary for a fast setting. We recommend the use of Portland cements (PC/HPC), which often give faster setting than blended or sulphate resistant cement types. However, MasterRoc SA 168 also works well with composite cement types (blended cements, fly-ash/slag). In all cases, it is strongly recommended to do preliminary tests to check setting times and the 24 h strength of the cements planned for use in a project.

Evaluation of setting and 24 h strength should be carried out on a test mortar in accordance with EFNARC European Specification for Sprayed Concrete (1996), Appendix 1, clause 6.3.

The following results should be taken as a performance guide only:

Initial set	Final set	24 h strength	Rating
2 min.	6-8 min.	18-20 N/mm ²	good
5 min.	8-12 min.	12-15 N/mm ²	OK
>10 min	>15 min.	<10 N/mm ²	poor

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Concrete mix

When MasterRoc SA 168 is used for wet mix spraying, the w/c+b ratio should be below 0.5 and preferably less than 0.45. When targeting extremely high early strength, a w/c+b ratio of 0.40 or lower is recommended. The lower ratios provide faster setting, higher early strength, improved durability; lower accelerator dosage and thicker layers can be applied over head.

Maximising the efficiency of mixing AFAs into the wet-mix concrete stream (and therefore performance), is achieved at the nozzle using twin compressed air/AFA feeds to the nozzle injector.

Dosing system

MasterRoc SA 168 is added at the nozzle. It is essential to have a constant and accurate dosage of accelerator into the concrete stream. To ensure quality sprayed concrete, follow the pump selection guidelines given below:

Works very well with:

- Mono pumps (stator & rotor pumps)
- Peristaltic pumps (Bredel)

Should not to be used with:

- Piston pumps
- All pumps with ball and seat valves
- Pressure tanks
- Gear pumps

Do not use a filter in the suction hose as this causes obstructions. Preferably the material should be drawn from the bottom of the drum/container.

Compatibility with other accelerators

MasterRoc SA 168 can be interchanged with most of BASF's alkali-free accelerators. For advice please contact your local BASF representative.

Do not mix or interchange MasterRoc SA 168 with most of BASF's alkali-free accelerators produced by another manufacturer, as this can cause immediate clogging of dosing pumps and hoses.

Consumption

The consumption of MasterRoc SA 168 also depends on the w/c+b ration, temperature conditions (concrete and ambient), cement reactivity and on required layer thickness, setting time and early strength development. The consumption of MasterRoc SA 168 is normally in the range of 3 to 10 % of binder weight.

Overdosing (>10 %) may result in decreased final strengths.

Cleaning of dosing pump

After the use of MasterRoc SA 168, the dosing pump and other parts of the system **must be thoroughly cleaned** with plenty of water. Failure to do provokes blockages in the dosing system when next used. Make sure that all operators involved in testing and application are fully informed.

Storage

- Must be stored at minimum +5 °C and maximum +35 °C (optimum temperature for storage and performance +20°C).
- Has to be kept in closed containers made of plastic, glass fiber or stainless steel.
- **Must not** be stored in normal steel containers.
- Storage in bulk tanks **requires** the use of agitation and / or circulation systems.
- After prolonged storage or transport we recommend to fully agitate prior to use by mechanical stirring or re-circulation pumping.
- If stored in tightly closed original containers under the above conditions, it has a shelf life of 6 months. Periodical remixing can extend the shelf life further.
- Please contact your local BASF representative prior to the use of any product that has been frozen.
- After prolonged storage, performance testing should always be carried out before use.



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Safety precautions

The same precautions as with handling and use of cementitious products should be observed.

Avoid eye and skin contact and wear rubber gloves and safety glasses. If contact occurs, rinse with plenty of water. In case of eye contact seek medical advice.

For further information, refer to the Material Safety Data Sheet or contact your local BASF representative.

The information given here is true, represents our best knowledge and is based not only on laboratory work but also on field experience. However, because of numerous factors affecting results, we offer this information without guarantee and no patent liability is assumed. For additional information or questions, please contact your local representative.

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