MasterRoc SA 178

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

Material Description

MasterRoc SA 178 is a high-performance low viscosity solution type alkali-free set accelerator for sprayed concrete applications.

Areas of Application

- In cycle shotcrete applications
- Wet and dry shotcrete applications
- Temporary and permanent ground support
- Slope stabilization
- Also suitable for acceleration of cementitious grouts

Characteristics & Benefits

- Formulated to provide rapid and continuous early-age strength development enabling earlier re-entry with improved safety and productivity.
- Alkali-free properties minimize the impact of acceleration on ultimate strength and durability.
- Optimised setting characteristics ensure:
  - Successful application even in areas of water ingress or lower temperatures
  - Lower rebound in applications when using the correct nozzle angle and distance to substrate
- High active contents ensure good does efficiency.
- Low viscosity solution characteristics eliminate the need for re-mixing of product prior to use.
- Liquid state ensures lower dust generation when spraying.

Technical Data

Form	Solution
Colour	Colourless to greyish
Turbidity	Clear to opaque
Density (@ 20°C)	1.39 ± 0.01 g/ml
pH value	3.0 ± 0.2
Dynamic Viscosity (1)	100 ± 20 mPas
Storage temperature	5°C to 35°C
Chloride content	<0.1%
[Na2O] EQV (%bw)	<1%

(1) Brookfield, +20oC, Spindle RV 2, HA/HB 2, 100rpm. Viscosity is dependent on degree of agitation and temperature

Concrete Mix

Where possible we recommend the use of Portland cements (PC/HPC), which normally give faster setting than blended or sulphate resistant cement types. However, MasterRoc SA 178 can work well with some composite cement types (blended cements, fly-ash/slag).
Like most accelerators MasterRoc SA 178 can be sensitive to the type of cement and we recommended laboratory cement compatibility testing is conducted prior to using the product on site.
When MasterRoc SA 178 is used for wet mix spraying, the water / cement (binder) ratio should be below 0.5 and preferably <0.45, and when targeting extremely high early strength 0.40 or lower. The lower w/c+b ratios provide faster setting; higher early strength, better durability, lower accelerator dosage and thicker layers can be applied overhead. Please consult your local Master Builders Solutions technical representative for further assistance with the lab testing and concrete mix design.

Dosing System

For wet spray applications MasterRoc SA 178 is added at the nozzle along with compressed air and for dry spray along with the mixing water at the nozzle.
It is essential to have a constant and accurate dosage of accelerator into the concrete stream in order to ensure quality sprayed concrete.
Prior to the use of MasterRoc SA 178 the dosing system must be thoroughly cleaned with plenty of water. Failure to flush out other accelerators may lead to blockages in the dosing system. Make sure that all operators involved in testing and application are fully informed.
MasterRoc SA 178 can be interchanged with most of Master Builders Solutions alkali-free accelerators. For specific advice please contact your local Master Builders Solutions representative.

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Consumption

The consumption of **MasterRoc SA 178** is normally in the range of 3 to 7% weight of binder.
Dosages greater than 10% by weight of binder may result in significant reductions in final strength.

Packaging

MasterRoc SA 178 is available in 1000 litre pallecons.

Storage & Shelf Life

Must be stored at minimum +5 °C and maximum +35 °C (optimum temperature for storage and performance is +20°C). Must be kept in closed containers made of plastic, glass fiber or stainless steel. Must not be stored in metallic vessels that can react with the product.
If stored in tightly closed original containers under the above conditions, it has a shelf life of 12 months. Please contact your local MBS representative prior to the use of any product that has been frozen. After prolonged storage, performance testing should always be carried out before use.

Precautions

For the full health and safety hazard information and how to safely handle and use this product, make sure that you obtain a copy of the Safety Data Sheet (SDS) from our office or website.

Disclaimer

MasterRoc-SA178-ANZ-V1-0224

MB Solutions Australia Pty Ltd	MB Solutions New Zealand Ltd	Emergency Advice:
ABN 69 634 934 419 Unit 102, 2 Burbank Drive Norwest NSW 2153 **Freecall: 1300 227 300** www.master-builders-solutions.com/en-au	45C William Pickering Drive Albany, Auckland New Zealand **Phone: +64 9 414 7233**	1300 954 583 within Australia (24hr) 0800 001 607 within New Zealand