

# MasterRoc SA I66

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

## Product description

MasterRoc SA I66 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

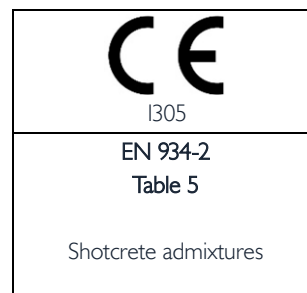
- Temporary and permanent ground support in tunneling and mining
- Slope stabilisation
- Also suitable for acceleration of cementitious grouts, such as for annulus grout in TBM tunnels, cemented ground injection and foam concrete.

## Features and benefits

MasterRoc SA I66 is ideally suited for wet mix sprayed concrete for ground 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.

In compliance with the European Regulation (EU No 305/2011 and EU No. 574/2014) the product is provided with the CE marking according to UNI EN 934-5 and the relative DoP (Declaration of Performance).



## Packaging

MasterRoc SA I66 is supplied in 1300 kgs containers or in bulk.

## Consumption

The consumption of MasterRoc SA I66 also depends on the w/c+b ratio, temperature conditions (concrete and ambient), cement reactivity and on required layer thickness, setting time and early strength development. The consumption is normally in the range of 3 to 10% of binder weight.

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

## 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 it 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 12 months. Periodical remixing can extend the shelf life further.

# MasterRoc SA I66

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

- Please contact your local Master Builders Solutions representative prior to the use of any product that has been frozen.
- After prolonged storage, performance testing should always be carried out before use.

Technical Information	
Form	Solution
Color	Clear, amber
Density (+20°C)	1.36 ± 0.02 g/ml
pH value (1:1 water solution)	2.3 ± 0.7
Viscosity Brookfield, + 20°C. Viscosity is dependent on degree of product agitation and temperature.	55 ± 15 mPa.s
Thermal stability	+5°C to +35°C
[Na <sub>2</sub> O] EQV. (%bw)	< 1%
Chloride content (%)	< 0,05
Dissolved solids (%)	41 – 45 %
Essential characteristic in accordance to EN 934-5	Performance
Chloride ion content	≤ 0,1% by mass
Alkali content ( Na <sub>2</sub> O equivalent)	≤ 1.0%
Corrosion behaviour	No corrosion induction effect of the steel embedded in the concrete
Compressive strength	Compliant with 2 (2)
Setting time	Initial set: ≤ 10 minutes Final set: ≤ 60 minutes

## 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 have a negative influence on the setting characteristics of the mix.

MasterRoc SA I66 can be sensitive to the type of cement. With some cements the setting characteristics can be too slow. We recommend the use of Portland cements (PC/HPC), which normally give faster setting than blended or sulphate resistant cement types. However, MasterRoc SA I66 also works well

with composite cements types (blended cements, fly-ash/slag). In all cases, it is strongly recommended to carry out preliminary tests to check setting 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 I, Clause 6.3.

# MasterRoc SA 166

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

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 MPa	Good
5 min	8-12 min	12-15 MPa	Ok
>10 min	>15 min	<10 MPa	Poor

## Concrete mix

When MasterRoc SA 166 is used for wet mix spraying, the w/c+b ratio should be below 0.5 and preferably <0.45. 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

**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 166 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 on the suction hose as this causes obstructions. Preferably draw the material off the bottom of the drum/container.**

## Compatibility with other accelerators

MasterRoc SA 166 can be interchanged with most Master Builders Solutions's alkali-free accelerators. For advice please contact your local Master Builders Solutions representative.

**Do not mix or interchange MasterRoc SA 166 with any type of accelerator produced by another manufacturer, as this can cause immediate clogging of dosing pumps and hoses.**

## Cleaning of dosing pump

After the use of MasterRoc SA 166, the dosing pump and other parts of the system must be thoroughly cleaned with plenty of water. Failure to do so provokes blockages in the dosing system when next used. Make sure that all operators involved in testing and application are fully informed.

## Safety information

For information on the correct and safe use, transport, storage and disposal of the product, consult the most recent Safety Data Sheet.

# MasterRoc SA I66

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

## Other services

For additional technical information, brochures, references, technical reports and technical support please visit [www.master-builders-solutions.com/it-it](http://www.master-builders-solutions.com/it-it) or alternatively contact [infomac@masterbuilders.com](mailto:infomac@masterbuilders.com).

Scan QR code to visit the product page and download the latest version of this technical data sheet and any additional documentation.



## Disclaimer

Since 16/12/1992, Master Builders Solutions Italia Spa has been operating under a Certified Quality System compliant with the UNI EN ISO 9001 Standard. Furthermore, the Environmental Management System is certified according to the UNI EN ISO 14001 Standard and the Safety Management System is certified according to the UNI ISO 45001 Standard.

For further information, please consult the local Technician of Master Builders Solutions. The technical advice on how to use our products, either written or verbally given, are based on the current state of our scientific and practical expertise, and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products.

Therefore, the customer is not exempted from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes.

This version supersedes all the previous ones.

### Master Builders Solutions Italia Spa

Via Vicinale delle Corti, 21 – 31100 Treviso – Italia

T +39 0422 429200 F +39 0422 421802

[www.master-builders-solutions.com/it-it](http://www.master-builders-solutions.com/it-it)

e-mail: [infomac@masterbuilders.com](mailto:infomac@masterbuilders.com)