

MasterRoc[®] AGA 155

Plasticising admixture with set retarding properties for use in annular grout mixes for TBM tunneling

DESCRIPTION

MasterRoc AGA 155 is a powerful liquid plasticizer which disperses and deflocculates cement particles whilst delaying the hydration process, thereby retarding the initial and final set. It can be used to improve workability without the addition of extra water, or to allow reductions in the free water content. Due to improved dispersion of the cement particles the process of hydration proceeds under the optimum conditions, leading to improved strength characteristics with or without reduction in free water.

PRIMARY USES

- High flow, low cement content, high W/C ratio annular grout mixes for TBM tunneling.
- Hot weather applications of grout where control of initial and final set is important.
- Retarded mortar mixes (also in combination with **MasterCast 910**)

TYPICAL APPLICATIONS

Setting control of annular grout mixes for injection behind segmental tunnel linings. **MasterRoc AGA 155** is designed for use in one or two component grouting systems and is compatible with accelerators such as **MasterRoc AGA 370**.

ADVANTAGES

- Increases compressive, tensile and flexural strength of concrete
- Increases density of grout mixes reducing permeability and thus increasing durability
- Allows a reduction in free water in the region of 5-12%
- Highly effective in low cement content high water cement ratio mixes where its use enables grout to be made more workable without loss in strength, density and durability
- Enables controlled extension of initial set
- The retarding action allows storage of the annular grout in the pumping lines and grout agitator tanks on the TBM for up to 72 hours depending on dosage

- The strength gain of annular grouts containing **MasterRoc AGA 155** is enhanced. After retardation of initial and final set, a more rapid hardening of the grout occurs, and the effect on stripping time is negligible

PACKAGING

MasterRoc AGA 155 is available in bulk, 1000 L IBCs or 210 L drums.

STANDARDS

EN 934-2 Tables 6 and 10
 ASTM C494: Type B & D

TYPICAL PROPERTIES*

Colour	Clear to light brown liquid
Specific Gravity at 25°C	1.158
Chloride content	"chloride free" to EN 934-2
Freezing point	0°C

APPLICATION GUIDELINES

MasterRoc AGA 155 should be added to the annular grout mix during the mixing cycle, at the same time as the water, or the bentonite. Never add **MasterRoc AGA 155** to the dry cement. No extension to normal mixing time is necessary.

DOSAGE

Field trials should be conducted to determine the optimum addition rates of **MasterRoc AGA 155**. As a guide to these trials, a dosage range of 500ml to 750ml per 100kg of cementitious material for normal use and 750 to 1500ml where higher retardation is required. Dosages outside this range can be used where improved workability, increased water reduction and / or further set retardation are required.

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EFFECTS OF OVER DOSAGE

A severe over dosage of **MasterRoc AGA 155** will result in:

- Increased retardation of initial and final set.
- Increase in workability.

Providing annular grout is properly cured the ultimate strength of the grout will not be adversely affected and will generally be higher than for normal concrete. Care should be taken to allow for the effect on injection pressures and advance rates.

COMPATABILITY

MasterRoc AGA 155 can be used with all types of Portland cement including sulphate resisting (Type V). For use with other special cements, contact Master Builders Solutions UGC Technical Dept.

MasterRoc AGA 155 should not be premixed with other admixtures. If other admixtures are to be used in annular grouts containing **MasterRoc AGA 155**, they must be dispensed separately. If in doubt, consult Master Builders Solutions UGC Technical Department.

DISPENSER

MasterRoc AGA 155 should be dispensed through a proprietary dispenser, such as is available from Master Builders Solutions.

STORAGE AND SHELF LIFE

Shelf life is 24 months in unopened original packing. Store in sealed containers or storage tanks to protect from extremes of temperature.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult Master Builders Solutions Technical Services Department.

HEALTH AND SAFETY

MasterRoc AGA 155 is not a fire or health hazard. Spillages should be washed down immediately with cold water. For further information refer to the Material Safety Data Sheet.

QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

* Properties listed are based on laboratory controlled tests.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

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