

# MasterRoc<sup>®</sup> HCA 20 (Formerly known as Delvo<sup>®</sup> Crete Stabilizer)

## Cement Hydration Control System for Wet And Dry Sprayed Concrete, Grouting and Cement Injection

### DESCRIPTION OF PRODUCT

**MasterRoc<sup>®</sup> HCA 20** is a high quality, liquid, non chloride chemical admixture which controls the dynamics of cement hydration. It delays hydration by suspending the hydration process and enabling re-activation hours or even days later with no loss of quality in the hardened sprayed concrete.

When dispensed into wet or dry mixes at the batching plant it fully stabilizes the hydration process by forming a protective barrier around the cement particles.

**MasterRoc<sup>®</sup> HCA 20** can be used with all types of cement minerals (C3S, S3A, C2S, C4AF and gypsum).

In order to re-activate the hydration process and accelerate the strength gain in mixes stabilized with **MasterRoc<sup>®</sup> HCA 20**, **MasterRoc<sup>®</sup> SA** series of alkali-free accelerators is added at the nozzle or injection point.

### FIELDS OF APPLICATION

- Tunneling and mining
- Temporary and permanent support
- Slope stabilization
- Annulus grouting (TBM)
- Cementitious injection systems

### FEATURES AND BENEFITS

With the use of **MasterRoc<sup>®</sup> HCA 20**, wet and dry concrete mixes can be kept workable for up to 3 days. This provides considerable benefits in the batching and utilization of the concrete.

- Fully flexible delivery options for sprayed concrete mixes
- No cleaning of pumps or pipes during work interruptions
- Complete use of wet and dry mixes – no waste disposal
- Time and cost saving

In addition to these benefits related to its function as a hydration control system, it also provides considerable reduction of rebound and dust.

### PACKAGING

**MasterRoc<sup>®</sup> HCA 20** is available in standart 1000 kg IBC containers or in bulk.

### MIXING

**Wet-mix sprayed concrete:** Premix aggregates with cement and one half of the mixing water. Under continuous mixing, add **MasterRoc<sup>®</sup> HCA 20** and a high performance superplasticizer, premixed with the second half of the mixing water, or after all the water has been added. Normal mixing time is sufficient. To avoid slump loss, the recommended minimum water content is 200 l/m<sup>3</sup>. In the event of unexpected delays, a later addition of 0.2-1% of **MasterRoc<sup>®</sup> HCA 20** is possible to prolong storage time for a few hours.

**Dry-mix sprayed concrete:** Premix aggregates with cement. The water content should be between 3 and 6%. Slowly add manually or with a dosing device the necessary quantity of **MasterRoc<sup>®</sup> HCA 20** under constant mixing and continue to mix for 2 to 3 minutes. If evenly distributed over dry-mix material (e.g. by spraying), mixing time can be reduced.

The addition of **MasterRoc<sup>®</sup> HCA 20** to the fresh mix is ideal. However, it can be added until up to 30 minutes after mixing of the dry-mix material without any problems.

### TECHNICAL DATA

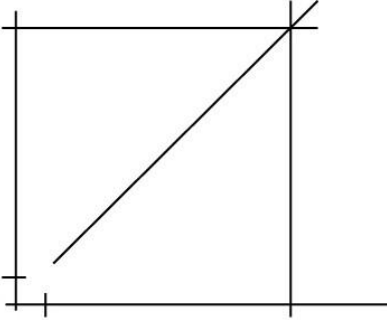
Form	Liquid
Colour	Red
Density (at +20 <sup>0</sup> C)	1.10 ± 0.02
pH Value	<2
Solubility in Water	Total
Thermal Stability	+1 <sup>0</sup> C
Chloride Content	<0.1%
Physiological Effect	Corrosive

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#### CONSUMPTION

Recommended dosage range



*Dosage indicated in this data sheet is only to be used as a guideline. To obtain accurate dosage rates, field tests have to be done with cement and aggregates under local conditions. It is recommended that you consult your local Master Builders Solutions representative.*

Normal recommended dosage of **MasterRoc® HCA 20** varies between 0.2% - 1% by weight of cement. The required dosage depends on: type of cement used, w/c ratio, ambient and concrete temperature and targeted open time.

#### STORAGE

Minimum storage temperature for **MasterRoc® HCA 20** is +1°C. If it has frozen, thaw and completely reconstitute with a mild mechanical agitation. Do not use pressurized air for agitation. Please contact your local **Master Builders Solutions** representative prior to the use of any products that have frozen. The maximum storage temperature for **MasterRoc® HCA 20** is +60°C. Performance tests should always be carried out prior to use. If stored in tightly closed original containers and under the above mentioned conditions, it has a shelf life of at least 12 months.

#### Typical wet-mix design for an open time of 4 to 6 hours

Ordinary Portland Cement 400 kg/m<sup>3</sup>

Microsilica 30 kg/m<sup>3</sup>

Aggregate 0-8mm 1710 kg/m<sup>3</sup>

**MasterRoc® HCA 20** 0.5-2.0 kg

**MasterGlenium®** superplasticizer 2.4-6.0 kg

Water/binder ratio 0.45

#### SAFETY PRECAUTIONS

**MasterRoc® HCA 20** is an irritant fluid. Contact with skin and eyes must be avoided. It is essential that safety glasses and rubber gloves are worn during handling. In case of contact with eyes or skin, flush immediately with plenty of water and seek medical advice. For further information, see the Material Safety Data Sheet.

#### DISCLAIMER

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#### CONTACT INFORMATION

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