

03 30 00	Cast-in-Place Concrete
03 40 00	Precast Concrete
03 70 00	Mass Concrete

MasterSet[®] R 300

Set Retarding Admixture

Description

MasterSet R 300 ready-to-use, liquid admixture is used for making more uniform and predictable high-performance concrete while retarding its setting time to facilitate placing and finishing operations.

It meets ASTM C 494/C 494M requirements for Type B, retarding, and Type D, water-reducing and retarding, admixtures.

Applications

Recommended for use in:

- Prestressed concrete
- Precast concrete
- Reinforced concrete
- Shotcrete
- Lightweight concrete
- Pumped concrete
- 4x4[™] Concrete
- Pervious concrete
- Self-consolidating concrete (SCC)

Features

- Reduced water content required for a given workability
- Retarded setting characteristics
- Improved workability
- Reduced segregation
- Superior finishing characteristics for flatwork and cast surfaces
- Moderate to extended retardation – depending on the dosage rate
- Full-form deflection can take place (before concrete sets) in extended pours for bridge decks, cantilevers, nonshored structural elements, etc.

Benefits

- Flexibility in the scheduling of placing and finishing operations
- Offsets the effects of early hardening during extended delays between mixing and placing
- Helps eliminate cold joints
- Peak temperature and/or rate of temperature rise in mass concrete lowered thereby reducing thermal cracking
- Increased compressive and flexural strengths

Performance Characteristics

Concrete produced with MasterSet R 300 admixture will have rapid strength development after initial set occurs. It develops higher early (24-hour) and ultimate strengths than plain concrete when used within the recommended dosage range, under normal, comparable curing conditions.

When MasterSet R 300 admixture is used in heat-cured concrete, the length of the preheating period should be increased until initial set of the concrete is achieved. The actual heat-curing period is then reduced accordingly to maintain existing production cycles without sacrificing early or ultimate strengths.

Rate of Hardening: The temperature of the concrete mixture and the ambient temperature (forms, earth, reinforcement, air, etc.) affect the hardening rate of concrete. At higher temperatures, concrete hardens more rapidly which may cause problems with placing and finishing. MasterSet R 300 admixture retards the set of concrete. Within the normal dosage range, it will generally extend the working and setting times of concrete containing normal portland cement approximately 1 hour to 5 hours compared to that of a plain concrete mixture, depending on job materials and temperatures.

Trial mixtures should be made with job materials approximating job conditions to determine the dosage required.

Guidelines for Use

Dosage: MasterSet R 300 admixture is recommended for use at a dosage of 4 ± 1 fl oz/cwt (260 ± 65 mL/100 kg) of cementitious materials for most concrete mixtures using typical concrete ingredients. Because of variations in job conditions and concrete materials, dosages other than the recommended amounts may be required. In such cases, contact your local sales representative.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MasterSet R 300 admixture will neither initiate nor promote corrosion of reinforcing steel in concrete. This admixture does not contain intentionally-added calcium chloride or other chloride-based ingredients.

Compatibility: MasterSet R 300 admixture may be used in combination with any Master Builders Solutions admixture. When used in conjunction with other admixtures, each admixture must be dispensed separately into the mix.

Storage and Handling

Storage Temperature: MasterSet R 300 admixture should be stored above freezing temperatures. If MasterSet R 300 admixture freezes, thaw at 35 °F (2 °C) or above and completely reconstitute by mild mechanical agitation. Do not use pressurized air for agitation.

Shelf Life: MasterSet R 300 admixture has a minimum shelf life of 18 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your local sales representative regarding suitability for use and dosage recommendations if the shelf life of MasterSet R 300 admixture has been exceeded.

Packaging

MasterSet R 300 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Safety Data Sheets: MasterSet R 300 admixture

Additional Information

For additional information on MasterSet R 300 admixture or its use in developing a concrete mixture with special performance characteristics, contact your local sales representative.

Master Builders Solutions creates technologies for the construction industry inspiring people to build better. We are active in ~40 countries and operate 35 production sites with over 1,600 employees. We develop, produce, and market high-quality chemical admixtures, as well as adjacent core technologies, to master the challenges of today and support a decarbonized future. Our people are pivotal and pair leading technologies and a strong brand heritage to surpass our customers' expectations and drive continuous value creation.

Limited Warranty Notice

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