

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

MasterSet[®] R 96 I

Set Retarding Admixture

Description

MasterSet R 96 I 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
- Increased compressive and flexural strength
- 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
- Minimizes premature hardening during 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

Performance Characteristics

Concrete produced with MasterSet R 96 I 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 and under normal, comparable curing conditions. When MasterSet R 96 I 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.

Mixture: 470 lb/yd³ (279 kg/m³) of Type I cement, slump 4.25 in. (110 mm), air-entrained concrete, concrete temperature 90 °F (32 °C), ambient temperature 90 °F (32 °C).

Setting Time Performance¹

Mixture	Initial Set (h:min)	Difference (h:min)
Plain	4:00	—
MasterSet R 96 I Admixture		
3 fl oz/cwt (195 mL/100 kg)	5:05	+1:05
4.5 fl oz/cwt (295 mL/100 kg)	7:10	+3:10
6 fl oz/cwt (390 mL/100 kg)	10:15	+6:15

¹Note: The data shown are based on controlled laboratory tests. Reasonable variations from the results shown here may be experienced as a result of differences in concrete making materials and jobsite conditions.

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 96 I 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 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 96 I 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, dosage rates 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 96 I 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 96 I admixture may be used in combination with any Master Builders Solutions admixtures. When used in conjunction with other admixtures, each admixture must be dispensed separately into the mixture.

Storage and Handling

Storage Temperature: MasterSet R 96 I admixture should be stored above freezing temperatures. If MasterSet R 96 I 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 96 I 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 96 I admixture has been exceeded.

Packaging

MasterSet R 96 I 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 96 I admixture

Additional Information

For additional information on MasterSet R 96 I 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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