

3	03 30 00	Cast-in-Place Concrete
	03 40 00	Precast Concrete
	03 70 00	Mass Concrete
4	04 05 16	Masonry Grouting

MasterMatrix[®] VMA 450

Viscosity-Modifying Admixture

Description

MasterMatrix VMA 450 organic, viscosity-modifying admixture (VMA) is a premier ready-to-use, liquid admixture specially developed for producing concrete with enhanced viscosity and controlled rheological properties. Concrete containing MasterMatrix VMA 450 admixture exhibits superior stability and controlled bleeding characteristics, thus increasing resistance to segregation and facilitating placement.

MasterMatrix VMA 450 admixture meets ASTM C 494/C 494M requirements for Type S, Specific Performance, admixtures.

Applications

Recommended for use in:

- Concrete containing "gap-graded" aggregates
- Lean concrete mixtures
- Concrete containing manufactured sand
- Concrete mixtures requiring "more body"
- Self-Consolidating Concrete (SCC)
- Self-Consolidating Grout
- Pervious concrete

Features

- Increased viscosity
- Thixotropic properties

Benefits

- Reduces segregation, even with highly fluid concrete mixtures
- Controls bleeding
- Reduces sagging, helping plastic concrete maintain its shape on slopes and arches
- Facilitates production of highly fluid concrete mixtures such as self-consolidating concrete (SCC)
- Facilitates placement of pervious concrete
- Superior and predictable in-place concrete properties
- Enhances surface appearance
- Uniform appearance in high coarse aggregate content and exposed-aggregate architectural concrete
- Provides flexibility in mixture proportioning
- Provides concrete stability during transport and placement

Performance Characteristics

Workability: A slight decrease in slump or slump flow may be noted after the addition of MasterMatrix VMA 450 admixture due to the increase in concrete viscosity. If necessary, the slight decrease in slump or slump flow can be offset easily by a minor increase in water-reducing or high-range water-reducing admixtures dosage. Very high slump flows can be achieved in SCC produced with MasterMatrix VMA 450 admixture. Also, because of its thixotropic properties, concrete containing MasterMatrix VMA 450 admixture may stiffen if left in a mixing vessel or truck without agitation. Workability can be restored simply by remixing the concrete mixture.

Slump Retention: In general, the slump retention characteristic of concrete mixtures containing MasterMatrix VMA 450 admixture is similar to that of plain concrete.

Air Content: A slightly higher dosage of air-entraining admixture may be required to achieve the desired air content when using MasterMatrix VMA 450 admixture.

Setting Time: MasterMatrix VMA 450 admixture has little to no effect on concrete setting time within the recommended dosage range.

Compressive Strength: MasterMatrix VMA 450 admixture has little to no effect on compressive strength within the recommended dosage range.

Guidelines for Use

Dosage: The recommended dosage range for MasterMatrix VMA 450 admixture is 0.5-4 fl oz/cwt (32-260 mL/100 kg) of cementitious materials for most concrete mixtures. Because of variations in concrete materials, job site conditions and/or applications dosages outside of the recommended range may be required.

Mixing: MasterMatrix VMA 450 admixture should not be added with the mix water and, therefore, must be dispensed into the concrete mixture as a delayed addition. MasterMatrix VMA 450 admixture may be added after all other concreting ingredients have been batched and thoroughly mixed, either at the batch plant or at the job site.

Concrete Placement: Concrete containing MasterMatrix VMA 450 admixture can be placed using conventional placement methods. Concrete placement should be continuous and without interruption.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MasterMatrix VMA 450 admixture will neither initiate nor promote corrosion of reinforcing and prestressing steel embedded in concrete, or of galvanized steel floor and roof systems. Neither calcium chloride nor other chloride-based ingredients are used in the manufacture of this admixture.

Compatibility: Do not use MasterMatrix VMA 450 admixture with admixtures containing beta-naphthalene sulfonate, such as MasterRheobuild® 1000 Admixture. Erratic behaviors in slump, slump flow and pumpability may be experienced.

MasterMatrix VMA 450 admixture is compatible with most admixtures used in the production of quality concrete including normal, mid-range and high-range water-reducing admixtures, air-entrainers, accelerators, retarders, extended-set control admixtures, corrosion inhibitors and shrinkage reducers.

MasterMatrix VMA 450 admixture is also compatible with slag cement and pozzolans such as fly ash and silica fume.

Storage and Handling

To prevent gelling, contact between MasterMatrix VMA 450 admixture and water in hoses, pumps, tanks or receiving vessels must be avoided.

Storage Temperature: MasterMatrix VMA 450 admixture must be stored at temperatures above 44 °F (7 °C) to avoid dispensing difficulties due to thickening. Do not allow MasterMatrix VMA 450 admixture to freeze since it cannot be reconstituted after thawing.

Shelf Life: MasterMatrix VMA 450 admixture has a minimum shelf life of 12 months when stored under recommended conditions. 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 MasterMatrix VMA 450 admixture has been exceeded.

Dispensing: Consult your local sales representative for the proper dispensing equipment for MasterMatrix VMA 450 admixture. If dispensing directly from the 55 gal (208 L) drum, it is recommended that the larger 2 in. (50 mm) opening be used.

Packaging

MasterMatrix VMA 450 admixture is supplied in 53 gal (201 L) drums and 264 gal (999 L) totes.

Related Documents

Safety Data Sheets: MasterMatrix VMA 450 admixture

Additional Information

For additional information on MasterMatrix VMA 450 admixture or on its use in developing concrete mixtures 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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