

MasterSure® 1390

Air-Detraining Admixture for Concrete

Formerly PS 1390*

Description

MasterSure 1390 air-detraining admixture is a patented liquid admixture formulated for use in concrete. MasterSure 1390 admixture facilitates a reduction in entrapped and, where applicable, entrained air content during mixing.

MasterSure 1390 admixture meets ASTM C 494/C 494M requirements for Type S, Specific Performance, admixtures.

Applications

Recommended for use in:

- Concrete where a reduction in air content is desired
- Heavyweight concrete
- Interior flatwork concrete

Air quality verification testing required for use in air-entrained concrete.

Features

- Reduces the air content of concrete mixtures
- Ready-to-use in the proper concentration for rapid, accurate dispensing
- Uses standard admixture dispensing equipment

Benefits

- Helps to maintain design strengths of concrete mixtures
- Reduces the need to over-design concrete mixtures to offset the effects of higher-than-desired air contents
- Permits the use of normal dosages of air-entraining admixtures to achieve desired air contents
- Reduces rejected load potential
- Reduces the effect of higher-than-desired air contents on concrete bleeding
- Helps to improve the integrity of interior flatwork concrete

Performance Characteristics

MasterSure 1390 admixture is formulated to reduce the total air content of concrete, as desired. In nonair-entrained concrete applications, MasterSure 1390 admixture can be used to keep the air content of the fresh concrete below the industry-accepted limit of 3 percent. In air-entrained concrete applications, MasterSure 1390 admixture can be used to reduce the total air content and bring it within specified limits. Additionally, MasterSure 1390 admixture can be added to a concrete mixture to permit the use of normal dosages of air-entraining admixtures to achieve the desired air content. In air-entrained concrete applications, trial evaluations must be performed to verify the quality of the air-void system using industry-accepted practices, such as petrographic examination of the hardened concrete or freeze-thaw testing.

Air Content Determination: The total air content of normal weight concrete should be measured in strict accordance with ASTM C 231, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method" or ASTM C 173/C 173M, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method." The air content of lightweight concrete should only be determined using the Volumetric Method. The air content should be verified by calculating the gravimetric air content in accordance with ASTM C 138/C 138M, "Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete." If the total air content, as measured by the Pressure Method or Volumetric Method and as verified by the Gravimetric Method, deviates by more than 1.5%, the cause should be determined and corrected through equipment calibration or by whatever process is deemed necessary.

Guidelines for Use

Dosage: The recommended dosage range for MasterSure 1390 admixture is 0.20 to 3.0 fl oz/cwt (15 to 200 mL/100 kg) cement, with most applications being in the range of 0.20 to 1.0 fl oz/cwt (15 to 65 mL/100 kg) cement. Dosage adjustments in increments of 0.10 to 0.20 fl oz/cwt (7 to 15 mL/100 kg) cement are generally adequate for providing a change in air contents. Because of variations in concrete materials, job site conditions and/or applications, dosages outside of the suggested range may be required.

Dispensing and Mixing: MasterSure 1390 admixture should be dispensed using direct-feed dispensing systems. It is recommended that fail-safe features must be included in this dispenser application for potential meter malfunctions. Consult your local sales representative for the proper dispensing equipment for MasterSure 1390 admixture.

For best results, add MasterSure 1390 admixture with the initial mix water. Alternatively, MasterSure 1390 admixture may be added after all other concreting ingredients have been batched and thoroughly mixed, either at the batch plant or at the jobsite. This can be achieved by backing the concrete up in the drum and dosing the MasterSure 1390 admixture on top of the concrete. This will facilitate carrying the admixture into the load. One gallon (4 L) of water to help wash MasterSure 1390 admixture into the concrete is permitted as long as the specified water-cementitious materials ratio is not exceeded. To ensure consistent and uniform results when MasterSure 1390 admixture is post-added to a concrete batch, it is important to provide sufficient mixing after the addition of the admixture. For truck mixing, a minimum of 30 to 50 revolutions (approximately 2 to 4 minutes) of the drum is recommended.

Product Notes

Compatibility: MasterSure 1390 admixture works best when used in combination with other BASF admixtures. MasterSure 1390 admixture is compatible with most other admixtures used in the production of quality concrete including normal, mid-range and high-range water-reducing admixtures. MasterSure 1390 admixture is also compatible with typical accelerators, retarders, extended set-control admixtures, corrosion inhibitors, and shrinkage reducers. However, field trial mixtures are recommended to ensure appropriate performance.

Storage and Handling

Storage Temperature: MasterSure 1390 admixture must be stored at temperatures above 32 °F (0 °C) and below 130 °F (54 °F). Protect MasterSure 1390 admixture from freezing because it cannot be reconstituted after thawing.

Shelf Life: A product stability evaluation has shown that MasterSure 1390 admixture has a shelf life of 12 months. Please contact your local sales representative regarding suitability for use and dosage recommendations if the stated shelf life of MasterSure 1390 admixture has been exceeded.

Packaging

MasterSure 1390 admixture is supplied in 3 gal (11 L) pails, 55 gal (208 L) drums, and 275 gal (1040 L) totes.

Related Documents

Safety Data Sheets: MasterSure 1390 admixture

Additional Information

For additional information on MasterSure 1390 admixture or its use in developing concrete mixtures with special performance characteristics, contact your local sales representative.

The Admixture Systems business of BASF's Construction Chemicals division is the leading provider of solutions that improve placement, pumping, finishing, appearance and performance characteristics of specialty concrete used in the ready-mixed, precast, manufactured concrete products, underground construction and paving markets. For over 100 years we have offered reliable products and innovative technologies, and through the Master Builders Solutions brand, we are connected globally with experts from many fields to provide sustainable solutions for the construction industry.

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*PS 1390 became MasterSure 1390 under the Master Builders Solutions brand, effective January 1, 2014.

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BASF Corporation
Admixture Systems
www.master-builders-solutions.basf.us

United States
23700 Chagrin Boulevard
Cleveland, Ohio 44122-5544
Tel: 800 628-9990 ■ Fax: 216 839-8821

Canada
1800 Clark Boulevard
Brampton, Ontario L6T 4M7
Tel: 800 387-5862 ■ Fax: 905 792-0651