MasterMatrix® 33
Rheology–Controlling Admixture

Description
MasterMatrix 33 rheology-controlling admixture is a patent-pending, liquid admixture that is specially developed for low-slump concrete and paving mixes. MasterMatrix 33 admixture meets ASTM C 494/C 494M requirements for Type S, Specific Performance, admixtures.

Applications
Recommended for use in:
- Mainline concrete paving
- Low–slump concrete
- Curb and gutter
- Extruded concrete
- Median barriers
- Hollow-core slabs, railroad ties, flat slabs, poles, walls, pipe, and other repetitive products
- Conventional slump concrete and SCC mixtures where enhanced surface appearance is desired

Features
- Modifies concrete rheology
- Acts as a lubricant
- Improves response to vibration
- Exhibits thixotropic properties – adds body

Benefits
- Higher volume flow which increases productivity/extrusion rate
- Facilitates optimization of cementitious materials content to improve extrusion and surface finish
- Facilitates the use of manufactured or gap-graded sands
- Reduces costs associated with placement and finishing
- Produces smoother surfaces
- Minimizes edge slump
- Improves riding quality
- Enhances aesthetics and durability
- Extends service life of vibrators/paving equipment

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Performance Characteristics

**Air Content:** MasterMatrix 33 admixture does not affect the air content in either air-entrained or non-air-entrained concrete. Typical dosages of air-entraining admixtures may be used to achieve the desired air content.

**Time of Setting:** MasterMatrix 33 admixture has little to no impact on the time of setting of concrete within the recommended dosage range of 2 – 12 fl oz/cwt (130 – 780 mL/100 kg) of cementitious materials.

**Workability/Extrudability:** MasterMatrix 33 admixture imparts a lubricating effect in concrete resulting in a very workable mixture. This effect allows low-slump concrete to be easily extruded thereby facilitating placement. A lower slump mixture that can be easily placed permits the design and placement of lower water-cementitious materials ratio mixtures resulting in higher compressive strengths and minimized edge slump.

**Compressive Strength:** MasterMatrix 33 admixture does not affect the compressive strength of concrete.

**Volume Flow:** Concrete containing MasterMatrix 33 admixture will exhibit an increase in mixture fluidity during vibration. Using the L-Box (equipment typically used for measuring the flow of self-consolidating concrete) with an externally-mounted vibrator, the volume flow of concrete, including that of low-slump concrete, can be measured.

![Effect of MasterMatrix 33 on Volume Flow of Concrete](image)

Note: 1 in. = 25.4 mm, 1 in.³ = 16.39 mL

It has been demonstrated in both laboratory and field testing that concrete containing MasterMatrix 33 admixture will exhibit a higher volume flow for a given concrete slump when consolidated with a fixed level of vibration. This desirable performance may result in increased productivity or equal productivity with a reduced vibration requirement for consolidation. Lowering the vibration requirement may extend equipment life and help maintain a quality air-void system in concrete.

Guidelines for Use

**Dosage:** The recommended dosage range for MasterMatrix 33 admixture is 2 to 12 fl oz/cwt (130 to 780 mL/100 kg) of cementitious materials. The typical dosage for most applications is 4 to 8 fl oz/cwt (260 to 520 mL/100 kg). Because of variations in concrete materials, job site conditions and/or applications, dosages outside of the suggested range may be required.

**Mixing:** MasterMatrix 33 admixture is typically added with the initial mix water. Alternatively, MasterMatrix 33 admixture may be added after all other concreting ingredients have been batched and thoroughly mixed, either at the batch plant or at the jobsite.

Product Notes

**Compatibility:** MasterMatrix 33 admixture works best when used in combination with BASF’s polycarboxylate-based water-reducing admixtures. MasterMatrix 33 admixture is compatible with most other BASF admixtures used in the production of quality concrete including normal, mid-range and high-range water-reducing admixtures, and air entrainers. MasterMatrix 33 admixture is also compatible with most accelerators, retarders, extended set-control admixtures, corrosion inhibitors, and shrinkage reducers. However, a field trial mixture is recommended to ensure appropriate performance.

Storage and Handling

**Storage Temperature:** MasterMatrix 33 admixture should be stored at temperatures above 32 °F (0 °C) and below 110 °F (43 °C). It is recommended that MasterMatrix 33 admixture be protected from freezing. However, if MasterMatrix 33 admixture freezes, it should be completely thawed and mildly agitated using mechanical stirring to restore uniformity.

**Shelf Life:** MasterMatrix 33 admixture has a shelf life of 18 months. Please contact your local sales representative regarding suitability for use and dosage recommendations if the stated minimum shelf life of MasterMatrix 33 admixture has been exceeded.

**Dispensing:** MasterMatrix 33 admixture should be dispensed using direct-feed dispensing systems. It is recommended that fail-safe features be included in this dispenser application for potential meter malfunctions. Consult your local sales representative for the proper dispensing equipment for MasterMatrix 33 admixture.
Packaging

MasterMatrix 33 admixture is supplied in 55 gal (208 L) drums, and 275 gal (1040 L) totes.

Related Documents

Safety Data Sheets: MasterMatrix 33 admixture

Additional Information

For additional information on MasterMatrix 33 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.

Limited Warranty Notice

BASF warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. BASF MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of BASF. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. BASF WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND. Purchaser must determine the suitability of the products for the intended use and assumes all risks and liabilities in connection therewith. This information and all further technical advice are based on BASF’s present knowledge and experience. However, BASF assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patent rights, nor shall any legal relationship be created by or arise from the provision of such information and advice. BASF reserves the right to make any changes according to technological progress or further developments. The Purchaser of the Product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with a full application of the product(s). Performance of the product described herein should be verified by testing and carried out by qualified experts.