

MasterMatrix UW 440

Anti-wash out admixture for use in underwater concrete or piling applications

Material Description

MasterMatrix UW 440 anti-washout admixture is a ready to use, powdered admixture specially developed for concrete placed underwater. Concrete treated with MasterMatrix UW 440 exhibits superior resistance to washout of cement and fines.

MasterMatrix UW 440 complies with BS 8443:2005 – “Specification for establishing the suitability of special purpose concrete admixtures” - Table 2 - Underwater Concrete Admixtures.

MasterMatrix UW 440 can also be used, at a lower dosage rate, in piling applications to prevent poor surrounding ground conditions from absorbing moisture from the concrete mix, and therefore making post pouring operations such as placing the reinforcing cage easier.

Fields of Application

MasterMatrix UW 440 admixture is recommended for use in all types of concrete pumped or placed underwater, where thixotropic action is desired. MasterMatrix UW 440 admixture is especially helpful in extreme conditions where conventional concrete or placing techniques would result in a high percentage of material loss due to washout.

Piling operations in poor ground conditions, or where a deep reinforcing cage needs to be inserted after the completion of the concrete placement.

Characteristics and Benefits

MasterMatrix UW 440 admixture produces a concrete mixture highly resistant to washout, while maintaining workability, pumpability, and placeability. The following special qualities are also provided:

- Reduces or eliminates concrete bleeding.
- Workability characteristics equal to untreated concrete.
- Virtually eliminates segregation even with highly fluid, high water-cementitious ratio mixes.
- Reduces/eliminates costly methods of de-watering.

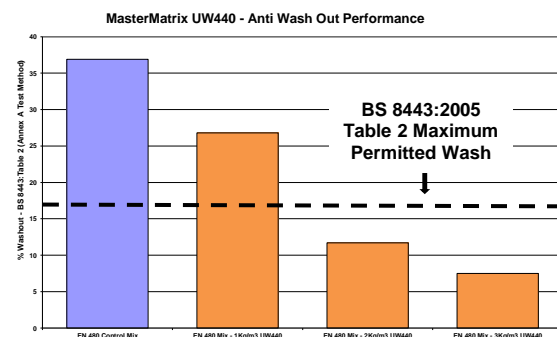
- Thixotropic action provides stiffening after concrete is placed.
- Minimises environmental impact of cement washout in water.
- Minimal to no effect on set time.
- Prevents absorption of moisture from the concrete into surrounding ground during piling operations.
- Easier placement of deep section reinforcing cages.

Application Procedure

MasterMatrix UW 440 admixture must be used in conjunction with a high range water reducing admixture from the MasterPolyheed, MasterGlenium, MasterEase or MasterSure ranges. This combination will produce a concrete that exhibits superior resistance to washout of cement and fines.

Washout Resistance

Washout as determined by Annex A of BS 8443:2005 “Determination of Washout”, reports the performance of MasterMatrix UW 440 admixture treated concrete compared to untreated concrete. This requires that an anti-washout admixture must result in a washout value of less than 15% when compared to the EN 480 control mix. Under normal circumstances a dosage of 1.5kg/m³ will comply with this figure, but this requires verification by trial mixes using the proposed materials & mix design.



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Workability Retention

Results from slump loss studies taken over a 60 minute period indicate MasterMatrix UW 440 admixture does not adversely affect concrete workability retention.

Set Time

MasterMatrix UW 440 admixture has little to no effect on concrete set time.

Air Content

The mechanism of action of MasterMatrix UW 440 can result in the concrete having a higher air content compared to a conventional concrete mix.

Compressive Strength

MasterMatrix UW 440 admixture has a negative effect on compressive strength. As the dosage rate of MasterMatrix UW 440 is increased, compressive strengths are proportionally impacted. It is strongly recommended that trial mixes be carried out to establish the correct performance.

Although this effect is lower when using in a piling operation, it is still recommended that trial mixes be performed prior to actual use on site.

Dosage

The workability, pumpability, and placeability. The following special qualities are also provided:

- *By Mass* - 1.0 to 3.0kg per cubic metre of concrete, typically 1.5kg will give less than 15% washout at a cement content of 450 kg/m³ and a w/c ratio of less than 0.45.

For most piling operations the MasterMatrix UW 440 admixture is recommended for use at a dosage range of:

- *By Mass* - 0.4 to 1.0kg per cubic metre of concrete, in most situations a dosage rate of 0.4 to 0.5 kg/m³ is suitable.

The dosage rates given above are for typical usages, they are not meant as absolute limits, as other dosages may be utilised in special cases according to specific job conditions. If required consult our Technical Services Department for advice. Trial mixes should be carried out to ensure optimum dosage and effect.

Compatibility

MasterMatrix UW 440 can be used with all types of EN 197 Cements. For use with other special cements, contact our Technical Services Department.

MasterMatrix UW 440 should not be pre-mixed with other admixtures. If other admixtures are to be used in concrete containing the MasterPolyheed range they must be dispensed separately.

When complimentary admixtures are required it is important that trials are performed, prior to any supply, to determine the respective dosages of any complimentary admixture, and the suitability, in the fresh and hardened state, of the resultant concrete. In these circumstances we recommend that you consult our Technical Services Department for further advice.

Packaging

MasterMatrix UW 440 is available in 1.0kg water soluble sachets, with 12 sachets in each plastic tub.

Contact Details

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Product Data	
Appearance	Beige Powder
Uncompacted Bulk Density @ 20°C	560 kg/m ³
Chloride content (%)	Less than or equal to 0.10
Logistics	
Shelf life:	18 months if stored according to manufacturer's instructions in unopened container.
Storage conditions:	Store in original sealed containers and at temperatures between 5°C and 30°C. Store under cover, out of direct sunlight and protect from extremes of temperature. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging.
Handling and transportation:	Refer to MasterMatrix UW 440 Safety Data Sheet
Disposal:	Refer to MasterMatrix UW 440 Safety Data Sheet

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Disclaimer

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Health and Safety

*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

Spillage

Chemical products can cause damage; clean spillage immediately.

DISCLAIMER

"Master Builders Solutions UK Ltd" (the Company) endeavours to ensure that advice and information given in Product Data Sheets, Method Statements and Material Safety Data Sheets (all known as Product Literature) is accurate and correct. However, the Company has no control over the selection of its products for particular applications. It is important that any prospective customer, user or specifier, satisfies him/her-self that the product is suitable for the specific application. In this process, due regard should be taken of the nature and composition of the background/base and the ambient conditions both at the time of laying/applying/installing the material and when the completed work is to be brought into use.

Accordingly, no liability will be accepted by the Company for the selection, by others, of a product, which is inappropriate to a particular application.

Products are sold subject to the Company's standard conditions of sale and all customers, users and specifiers, should ensure that they examine the Company's latest Product Literature.