

MasterPolyheed 415

High range water reducing admixture for concrete - EN 934-2: T3.1 & T3.2

Material Description

MasterPolyheed 415 is a ready-to-use innovative mid-range water-reducing admixture, based on MasterGlenium technology, is very effective in producing concrete with different levels of workability for applications such as pumping and flatwork. MasterPolyheed 415 is also very effective in producing concrete with enhanced finishing characteristics.

MasterPolyheed 415 has been formulated to permit increased replacement levels of natural sands with crushed rock fines.

Fields of Application

- To increase/extend workability.
- To increase compressive strength.
- To effect cement economies.
- Wide dosage range enabling water reductions to produce a dense concrete with reduced permeability and reduced water penetration.
- In areas of congested reinforcement where high workability is of benefit.
- Wherever reduced water contents would be of benefit.
- In hot weather to extend workability.

Characteristics and Benefits

MasterPolyheed 415 offers the following benefits:

- Can be used in a wide variety of concrete mixtures as a multi-purpose admixture.
- Dosage flexibility - provides up to 25% water reduction.
- Provides better slump retention.
- Enhanced later-age strength.
- Excellent finishability, even with manufactured sands and in lean mixes.
- Significantly improves the workability of a concrete therefore reducing placing time.
- Improves the cohesive properties of the concrete helping to reduce segregation and bleed.

- Allows water reduction to be achieved whilst maintaining workability, thereby increasing strength, durability and impermeability.
- Enables economies in mix designs to be achieved.
- Improves strengths in mixes containing PFA, GGBS, Portland Limestone and micro silica blends.
- Faster setting at higher dosages compared to other mid-range water-reducing admixtures.
- Provides lower in-place cost.
- Increased service life of structures.
- Engineered for use with increased crushed fines replacement of natural sands.

Application Procedure

MasterPolyheed 415 is a liquid ready-to-use admixture to be added to the concrete during the mixing process. The best results are obtained when the admixture is added after all the other components are already in the mixer and after the addition of at least 80% of the total water. MasterPolyheed 415 should never be added to dry cement.

The water content is adjusted to obtain the desired consistence.

Dosage

Field trials should be conducted to determine the optimum addition rates of MasterPolyheed 415. The normally recommended dosage rate of MasterPolyheed 415 is approximately:

- *By Volume* - 0.40 to 1.20 litres per 100 kg of cement (binder).
- *By Mass* - 0.44 to 1.33 kg per 100 kg of cement (binder).

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



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mixes should be carried out to ensure optimum dosage and effect.

Effects of Overdosing

A severe over dosage of MasterPolyheed 415 may result in the following:

- Retardation of initial set.
- Increase in air entrainment.
- Increase in workability.

Providing concrete is properly cured, the ultimate strength of the concrete will not be adversely affected and will generally be higher than for normal concrete.

Compatibility

MasterPolyheed 415 can be used with all types of EN 197 Cements. For use with other special cements, contact our Technical Services Department.

MasterPolyheed 415 should not be pre-mixed with other admixtures. If other admixtures are to be used in concrete containing MasterPolyheed 415 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.

MasterPolyheed 415 is compatible and recommended for use with:

- Viscosity modifying agent MasterMatrix to produce Smart Dynamic or Self Compacting Concrete
- Air entraining agent MasterAir to improve frost/thaw resistance

MasterPolyheed 415 is not compatible with the MasterRheobuild range of products.

Packaging

MasterPolyheed 415 is supplied in bulk, 1000-litre IBC's and 15-litre containers.

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Product Data	
Appearance:	Brown liquid
Specific gravity @ 20°C:	1.11 ± 0.03 g/cm ³
pH-value:	5.0 ± 1.0
Alkali content (%):	Max 0.50% by mass
Chloride content (%):	Max 0.10% by mass
Corrosion behaviour:	Contains only components according to BS EN 934-1:2008, Annex A.1
Air Content:	Fulfilled
Increase in consistence:	Increase of ≥ 120mm from initial slump or ≥ 160mm from initial flow
Retention of consistence:	At 30 mins ≥ Reference mix at initial
Compressive strength:	Fulfilled
Durability:	NPD
Dangerous substances:	NPD
Logistics	
Shelf life:	12 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 MasterPolyheed 415 Safety Data Sheet
Disposal:	Refer to MasterPolyheed 415 Safety Data Sheet

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DISCLAIMER

MasterPolyheed 415, Master Builders Solutions UK Ltd, Version 6

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.

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

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Declaration of Performance can be found at:
www.master-builders-solutions.com/en-gb

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