

MasterGlenium ACE 466

High range water reducing admixture for precast concrete

Material Description

MasterGlenium ACE 466 is part of the innovative latest generation range of polycarboxylic ether polymer superplasticizers. It also contains a high-molecular weight synthetic copolymer, particularly designed for use in the precast industry. MasterGlenium ACE 466 has been developed to provide an enhanced period of consistence retention without compromising the early strength development of the concrete.

The particular molecular configuration of MasterGlenium ACE 466 accelerates the cement hydration by allowing rapid adsorption of the molecule onto the cement particles, this combined with an efficient dispersion effect, exposes increased surface of the cement grains to react with water exposing increased surface of the cement grains to react with water. As a result, it is possible to obtain earlier development of the heat of hydration, rapid development of the hydration products and, consequently, higher strengths at very early age.

The polymer structure of MasterGlenium ACE 466 is specially designed to improve the rheology of precast concrete, making it very flowable and with low viscosity even at very low water/cement ratios, without increasing stickiness. Robustness and retention performance is a distinctive feature of the precast concrete produced with MasterGlenium ACE 466. Thanks to its tailored mode of action in concrete, MasterGlenium ACE 466 imparts a level of viscosity within a mix enabling the right balance between fluidity, passing ability and resistance to segregation - apparently opposing properties - to be achieved. This balance is lacking when the fluidity of the concrete is obtained by adding water.

Fields of Application

MasterGlenium ACE 466 is suitable for making precast concrete elements with highly-fluid concrete without segregation but low water/cement ratios and, consequently, high early and final strengths. Ecological and ergonomic precast production, MasterGlenium ACE 466 is optimised for use with the Master X-Seed 100 Crystal Speed Hardening concept.

Characteristics and Benefits

MasterGlenium ACE 466 offers the following benefits for the concrete industry:

- Production of highly flowable, robust self-compacting concrete having a low water cement ratio along with an optimal rheology.
- Enhanced robustness and consistency retention, combined with low stickiness.
- Environmentally friendly, CO₂ reduced mix-design optimization.
- Potential elimination or reduction of heat curing.
- Improved surface appearance.
- Durable precast concrete elements as per EN 206-1.
- Elimination or reduction of the energy required for placing, compaction and curing (ZERO ENERGY).
- Optimization of the curing cycle by reducing curing time or curing temperature. Increased productivity, particularly in combination with Master X-Seed 100 Crystal Speed Hardening.
- SCC (Self-compacting concrete) with a low fines content (material passing the 0.125 mm sieve).

Dosage

Field trials should be conducted to determine the optimum addition rates of MasterGlenium ACE 466. As a starting point, the following dosage range is recommended.

- *By Volume* - 0.4 to 1.00 litres per 100 Kg of cement (binder)
- *By Mass* - 0.42 to 1.06 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 mixes should be carried out to ensure optimum dosage and effect.

Mixing

MasterGlenium ACE 466 is a ready-to-use liquid admixture, which should be added to the concrete during the mixing process together with the water. This is particularly important



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in order to obtain maximum efficacy. For best performance, it is advisable to dispense after 50 to 70% of the mixing water has been added and then continue mixing until the mix is completely homogeneous.

Dispensing

MasterGlenium ACE 466 should be dispensed through a proprietary dispenser. Details are available on request from our Technical Services Department

Compatibility

MasterGlenium ACE 466 can be used with all types of EN 197 Cements. For use with other special cements, contact our Technical Services Department. MasterGlenium ACE 466 should not be pre-mixed with other admixtures. If other admixtures are to be used in concrete containing MasterGlenium ACE 466, they must be dispensed separately.

When such complimentary admixtures are required it is important that laboratory 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

MasterGlenium ACE 466 is available in Bulk, 1000-litre IBC's and 15-litre containers.

Contact Details

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Product Data	
Appearance:	Yellow liquid
Specific gravity @ 20°C:	1.06 ± 0.02 g/cm ³
pH-value:	6.0 ± 1
Alkali content (%):	≤ 1.00 by mass
Chloride content (%):	≤ 0.10 by mass
Corrosion behaviour:	Contains only components according to BS EN 934-1:2008, Annex A.1
Air Content:	Fulfilled
Water reduction:	≥ 112% of Reference mix

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Increase in consistence:	Increase of ≥ 120 mm from initial slump or ≥ 160 mm from initial flow
Retention of consistence:	At 30 mins \geq 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 MasterGlenium ACE 466 Safety Data Sheet
Disposal:	Refer to MasterGlenium ACE 466 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.

