

# MasterGlenium ACE 440

**Admixture Controlled Energy - Essential component of Zero Energy System**  
Second generation of polycarboxylate ether superplasticizer to optimize the production of Precast concrete structural elements.

## DESCRIPTION AND WHERE TO USE

MasterGlenium ACE 440 is an innovative second generation of polycarboxylic ether polymers superplasticizer.

The particular molecular configuration of MasterGlenium ACE 440 accelerates the cement hydration. Rapid adsorption of the molecule onto the cement particles, combined with an efficient dispersion effect, exposes increased surface of the cement grains to react with water.

As a result of this effect, it is possible to obtain earlier development of the heat of hydration, rapid development of the hydration products and, as a consequence, higher strengths at very early age.

MasterGlenium ACE 440 is suitable for making precast concrete elements with Rheoplastic concrete having fluid consistence, no segregation and low water cement ratio and, consequently, high early and long term strengths.

**The use of MasterGlenium ACE 440 is recommended, in combination with MasterMatrix SDC 150 for the Smart Dynamic Concrete technology.**

MasterGlenium ACE 440 is chloride free, meets UNI EN 934-2, UNI EN 480 (1-2), UNI 10765, ASTM C 494-92 requirements for Type F and it is also compatible with all cements meeting the UNI EN 197-1 and ASTM standards.

## ZERO ENERGY SYSTEM

Zero Energy System is based on a combination of the avant-garde admixture MasterGlenium ACE 440 and the innovative technology of Rheodynamic concrete. The Zero Energy System has been developed to help the precast concrete producer to rationalize his production process and save on energy costs combined with improved quality of the product and the working conditions.

## BENEFITS FOR PRECAST PRODUCER

MasterGlenium ACE 440 offers the following benefit for the precast concrete industry to:

- Produce Rheoplastic or Smart Dynamic Concrete having a low water cement ratio.
- Optimize the curing cycles by reducing curing time or curing temperature.

- Eliminate the heat curing.
- Eliminate the energy required for placing and compaction and curing (ZERO ENERGY).
- Increase productivity.
- Improve surface appearance.
- Produce durable precast concrete elements as per EN 206-1.

As compared to the traditional superplasticizers, the engineering properties such as early and ultimate compressive and flexural strengths, bond to steel, and modulus of elasticity, shrinkage, creep, and impermeability are improved.

## COMPATIBILITY

MasterGlenium ACE 440 is compatible and recommended for use with:

- **MasterMatrix SDC 150** to produce a Smart Dynamic Concrete;
- silica fume, **MasterRoc MS 610**, for high performance concrete and increased durability in chemical aggressive environments (exposure class XA1 to XA3, EN 206-1);
- demoulding agent from **MasterFinish RL** line to help remove formwork and to improve the architectural finish.

**MasterGlenium ACE 440 is not compatible with all admixtures of MasterRheobuild series.**

## DIRECTIONS FOR USE

MasterGlenium ACE 440 is a liquid admixture to be added to the concrete during the mixing process:

- mix cement and secondary binders, sand, coarse aggregates and the mix water until a stiff, yet homogeneous, mixture is obtained;
- optimal water reduction is obtained if MasterGlenium ACE 440 is poured into the concrete mix right after the addition of the initial 80-90% of the mixing water. Avoid adding the admixture to the dry aggregates.
- Add MasterGlenium ACE 440 admixture and mix again for to 60 seconds in order to disperse it homogeneously.
- Continue mixing and adjust the water content to obtain the required workability.

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Technical Information	
Form	Liquid
Relative density (g/ml at 20°C)	1.042 – 1.082

## DOSAGE

The normal recommended dosage rate is 0.6 to 1.0 litres per 100 kg of binder.

For Smart Dynamic Concrete with MasterMatrix SDC 150, the advised dosage for MasterGlenium ACE 440 is 0.8 to 1.2 litres per 100 kg of the binder.

Other dosages may be used in special cases according to specific job site conditions.

In such cases please consult our Technical Service Department for advice.

## PACKAGING AND STORAGE

MasterGlenium ACE 440 is available in 10 litre cans, 1.000 liter containers or in bulk.

MasterGlenium ACE 440 must be stored in a place where the temperature does not drop below 5°C. In case of freezing, warm up and homogenise the admixture solution before using.

From 16/12/1992 BASF Construction Chemicals Italia Spa operates under the Quality System in compliance with European Standard UNI-EN ISO 9001. The environmental management system of BASF Construction Chemicals Italia Spa is certified accordingly to UNI EN ISO 144001 and the System of Safety Management is certified accordingly to OHSAS 18001. Environment sustainability: Partner Green Building Council since 2009.

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For further information, please consult your local BASF Construction Chemicals Italia Spa representative.

The technical advice on how to use our products, either written or verbally given, are based on the present state of our best scientific and practical knowledge, and no guarantee and/or implicit or explicit responsibility are assumed on final results of works executed by the use of our products.

The owner, his representative, or the contractor is responsible for checking the suitability of our products as to the intended use and aims.

Supersedes all prior issues on this product.

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