

# MasterGlenium<sup>®</sup> ACE 8481

**Ultra-High early strength gaining superplasticizer with super slump retention for precast**

## DESCRIPTION

**MasterGlenium ACE 8481** is the superplasticizer based on second generation polycarboxylic ether polymers, developed using nano-technology. The product has been primarily developed for applications in high performance pre-cast concrete to facilitate high early strength gains with super slump retention.

**MasterGlenium ACE 8481** is free of chloride & low alkali. It is compatible with all types of cements.

## RECOMMENDED USES

- **MasterGlenium ACE 8481** is suitable for making precast concrete elements at all workability's including Rheoplastic or Super workable concrete having fluid consistence, no segregation, a low water binder ratio and, consequently high early and long-term strengths
- **MasterGlenium ACE 8481** may be used in combination with MasterMatrix 2 (formerly known as GLENIUM STREAM 2) for producing Rheo-dynamic concrete, capable of self-compaction, even in the presence of dense reinforcement without the aid of vibration, for making precast elements.
- As a component of Zero Energy System™

## FEATURES AND BENEFITS

- Produces Rheoplastic and Rheodynamic concretes having a low water cement ratio
- Optimize curing cycles by reducing curing time or curing temperatures
- Eliminate heat curing
- Eliminate the energy required for placing, compacting & curing (Zero Energy System™)
- Increase productivity/ reduction in cycle time
- Improve surface appearance
- Produce durable precast concrete elements
- Improved engineering properties, compared to traditional superplasticizer such as early and ultimate compressive and flexural strengths, reduced shrinkage and low permeability.

## ZERO ENERGY SYSTEM:

Zero Energy System is based on a combination of the avant-garde admixture **MasterGlenium ACE 8481** 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.

## sureTEC – Super Retention Technology:

sureTEC stands for Super Retention Technology. It is a concrete admixture technology that brings benefits to all concrete producers in terms of slump retention and early strength development. It assures concrete workability at the time of placing. With application of sureTEC, concrete producers gain control over the workability of concrete at the time of placing far beyond previously known levels. No matter if low workability or high performance self-compacting concrete, the placing workability remain unchanged from batch to batch. As a result, concrete producers are enabled to provide a specified workability of concrete consistently, even if hot weather or traffic conditions or other factors make it difficult to estimate the time window between batching and placing.

SURETEC also provides value to the end customers. The excellence in terms of quality control of concrete at the same time assures consistency of workmanship, a decisive prerequisite for a long life-cycle of a concrete structure.

## PERFORMANCE TEST DATA

Aspect	Reddish brown liquid
Relative Density	1.07 □ 0.01 at 25°C
pH	≥6
Chloride ion content	< 0.2%

## TEST CERTIFICATION/APPROVALS

- ASTM C494 Type F
- EN 934-2 T3.1/3.2
- IS 9103

## DOSAGE

Optimum dosage of **MasterGlenium ACE 8481** should be determined with trial mixes. As a guide, a dosage range of 600 ml to 1500ml per 100kg of cementitious material is normally recommended. Because of variations in concrete materials, job site conditions, and/or applications, dosages outside of the recommended range may be

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required. In such cases, contact your local Master Builders Solutions representative.

## Effects of over dosage

A severe over-dosage of **MasterGlenium ACE 8481** can result in the following:

- Increase in air entrainment
- Extension of initial and final set
- Bleed/segregation of mix, quick loss of workability
- Increased plastic shrinkage

In the event of over-dosage, provided concrete is properly compacted & cured, the ultimate strength of the concrete may not be adversely affected and shall generally be higher than that for normal concrete. Due allowance should be made for the effect of fluid concrete pressure on form work, and stripping times should be monitored.

In the event of over dosage, consult your local Master Builders Solutions representative immediately.

## APPLICATION

**MasterGlenium ACE 8481** is a ready-to-use liquid which is dispensed into the concrete together with the mixing water. The plasticising effect and water reduction are higher if the admixture is added to the damp concrete after 50 to 70% of the mixing water has been added. The addition of **MasterGlenium ACE 8481** to dry aggregate or cement is not recommended. Automatic dispensers are available.

Thorough mixing is essential and a minimum mixing cycle, after the addition of the **MasterGlenium ACE 8481**, of 60 seconds for forced action mixers is recommended.

## SUGGESTED SPECIFICATION

The slump-retaining hyper plasticiser shall be **MasterGlenium ACE 8481**, high range water reducing, high early strength gain type, Superplasticiser based on polycarboxylic ether formulation. The product shall have specific gravity of 1.07 & solid contents not less than 26% by weight. The product shall comply with ASTM C494 Type F and shall be free of lignosulphonates, naphthalene salts and melamine formaldehyde when subjected to IR Spectra.

## COMPATIBILITY

**MasterGlenium ACE 8481** is compatible with most of the products under the MasterPozzolith & MasterSet series (formerly known as POZZOLITH)

including MasterSet RT 55. Use MasterMatrix 2 (formerly known as Glenium Stream 2) as viscosity modifying agent in self compacting concrete. It must not be used in conjunction with any other admixture unless prior approval is received from Master Builders Solutions Technical Services Department.

## CORROSIVITY – NON CORROSIVE

**MasterGlenium ACE 8481** admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any calcium chloride-based ingredients are used in the manufacture of **MasterGlenium ACE 8481** admixture. In all concrete application, **MasterGlenium ACE 8481** admixture will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices.

## WORKABILITY

**MasterGlenium ACE 8481** ensures that concrete remains workable more than 45 minutes at +25°C. Workability loss is dependent on temperature, and on the type of cement, the nature of aggregates, the method of transport and initial workability.

## PACKAGING

**MasterGlenium ACE 8481** is supplied in 225 kg drums or in bulk on request.

## STORAGE /SHELF LIFE

**MasterGlenium ACE 8481** must be stored where temperatures do not drop below +5°C. If product has frozen, thaw at +5°C or above and completely reconstitute using mild mechanical agitation. Do not use pressurized air for agitation. Store under cover, out of direct sunlight and protect from extremes of temperature.

Shelf life is 12 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult your local Master Builders Solutions representative.

## PRECAUTIONS

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

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Do not reuse containers for storage of consumable item. For further information refer to the material safety data sheet.

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**NOTE**

Field service where provided does not constitute supervisory responsibility. Suggestions made by Master Builders Solutions either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not Master Builders Solutions, are responsible for carrying out procedures appropriate to a specific application.

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