



The Chemical Company

GLENIUM[®] ACE 474

Essential component of ZERO ENERGY SYSTEM – A new generation of high-performance polycarboxylate ether (PCE) superplasticizers for the Precast industry.

Description of Product

GLENIUM ACE 474 is an innovative superplasticizer based on newly developed polycarboxylate ether polymers.

The particular molecular configuration of GLENIUM ACE 474 product accelerates the cement hydration by 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, as a consequence, higher strengths at very early age.

The polymer structure of GLENIUM ACE 474 product is specially designed to improve the rheology of precast concrete, making it very flowable and low viscous even at very low water/cement ratios, without increasing stickiness. Robustness is a distinctive feature of the precast concrete produced with GLENIUM ACE 474.

ZERO ENERGY SYSTEM

Zero Energy System is based on a combination of the latest GLENIUM ACE superplasticizers and advanced self-compacting concrete technology. 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.

Fields of Application

G l e n i u m A C E 4 7 4 is suitable for making precast concrete elements with highly-fluid concrete without segregation but low water cement ratio and, consequently, high early and final

strengths. G l e n i u m A C E 4 7 4 may be used in combination with GLENIUM STREAM or RheoMATRIX for producing advanced self-compacting concrete like Smart Dynamic Concrete (SDC, latest V-type SCC), without the aid of vibration, for economic, ecological and ergonomic precast production.

Features and Benefits

G l e n i u m A C E 4 7 4 offers the following benefits for the precast 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 in concrete quality with low stickiness.
- Environmentally friendly, CO₂ reduced mix-design optimization.
- Elimination of heat curing.
- Improved surface appearance.
- Durable precast concrete elements as per EN 206-1.
- Elimination of the energy required for placing, compaction and curing (ZERO ENERGY).
- Optimization of the curing cycles by reducing curing time or curing temperature.
- Increased productivity.

Directions for use

Glenium ACE 474 is a liquid admixture which is to be added to the concrete during the mixing process. The best results are obtained when the admixture is added to the mixing water that is used for the concrete mix after all the other components are already in the mixer.

Optimal water reduction is obtained if the GLENIUM ACE 474 product is poured into the

GLENIUM® ACE 474

Technical Data/Typical Properties	
Appearance and Form	Yellow liquid
Specific gravity @ 20°C	1.060 – 1.080 g/cm ³
pH-value @ 20°C	4 – 7
Chloride ion content	≤ 0.01 %
Alkali content (Na ₂ O equivalent %)	< 0.1%

Directions for use (continued)

concrete mix right after the addition of the initial 80-90% of mixing water. Avoid adding the admixture to the dry aggregates.

Continue mixing and adjust the water content to obtain the required workability.

Dosage rate

The recommended dosage rate is 0.2 to 2.5 liters per 100 kg of the binder.

Other dosages may be used in special cases according to specific production conditions. In this case please consult our Technical Services Department.

Compatibility

GLENIUM ACE 474 is compatible and recommended for use with:

- RheoMATRIX and GLENIUM STREAM to modify the viscosity of SCC.
- MICRO-AIR, air entraining admixture, to improve freeze-thaw resistance (exposure class XF1 to XF4, EN 206-1)
- RHEOFINISH, demoulding agent for easy formwork removal and improved finish.
- MASTERKURE, curing compound for highly efficient water retention and friendly use.

Packaging

GLENIUM ACE 474 is available in bulk, 1000 Litre containers & 205 Litre drums.

Storage

GLENIUM ACE 474 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.

If stored in unopened containers according to manufacturer's instructions, the shelf life is 12 months.

Handling and transportation

No special requirements must be observed while the product is used. Protection gloves and glasses are recommended. Do not eat, drink or smoke during the application. GLENIUM ACE 474 is non-flammable, non-toxic or irritant and is not subject to special transport requirements.

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