

GLENIUM™ SKY 787

PCE based superplasticiser for High Quality ready-mix concrete using Total Performance Control™

Description

GLENIUM SKY 787 is the superplasticiser based on second generation polycarboxylic ether polymers, developed using nano-technology. The product has been primarily developed for applications in high performance ready-mix concrete to facilitate Total Performance Control™.

GLENIUM SKY 787 is free of chloride & low alkali. It is compatible with all types of cements.

Uses

- GLENIUM SKY 787 is used for the production of high quality ready-mix concrete.
- GLENIUM SKY 787 may be used in combination with GLENIUM STREAM 2 for producing Rheodynamic Concrete, capable of self-compaction, even in the presence of dense reinforcement.

Advantages

GLENIUM SKY 787 is based on **Total Performance Control™** concept – which ensures that ready-mix producers, contractors and engineers get a concrete that is of the same high quality as originally specified; starting from production at the batching plant, to the delivery and application into place and followed by its hardening process. Utilising Rheodynamic Concrete technology, it provides a concrete mix with exceptional placing characteristics and accelerated cement hydration for early strength development and high-quality concrete.

The product offers the following benefits for:

The ready-mix producer:

- Capability of delivering high quality concrete at any time to the job site in place
- Production of concrete with low w/c ratio that meets international guidelines for consistency classes(EN 206-1) without loss of workability
- Single product for many application needs

The Contractor/Applicator:

- Easier placing and faster strength development
- Improved concrete surface
- Guarantee to place the same concrete as specified and ordered from ready-mix plant

The Engineer/Developer:

- Insurance that concrete meets original specifications
- High quality concrete with improved durability

Chemistry and mechanism of action

What differentiates GLENIUM SKY 787 from the traditional superplasticisers is a new, unique mechanism of action that greatly improves the

effectiveness of cement dispersion. Traditional superplasticisers based on melamine and naphthalene sulphonates are polymers which are absorbed by the cement granules. They wrap around the granules' surface areas at the very early stage of the concrete mixing process. The sulphonic groups of the polymer chains increase the negative charge of the cement particle surface and disperse these particles by electrical repulsion. This electrostatic mechanism causes the cement paste to disperse and has the positive consequence of requiring less mixing water to obtain a given concrete workability.

GLENIUM SKY 787 has a different chemical structure from the traditional superplasticisers based on PCE polymers (first generation PCE polymers). The second generation GLENIUM SKY 787 is derived directly from the Total Performance Control™ Concept and is specially engineered for ready-mix concrete. The particular configuration of PCE polymer, allow its delayed absorption on to the cement particles and disperse them efficiently. As compared with other first generational PCE superplasticisers, it is possible to obtain a high quality concrete mix with accelerated strength development and extended workability without delayed setting characteristics.

Typical Properties

Aspect	: Light brown liquid
Relative Density	: 1.11 ± 0.01 at 25°C
pH	: ≥ 6
Chloride ion content	: < 0.2%

Standards

- ASTM C494 Types B,D &G
- EN 934-2 T11.1/11.2
- IS 9103: 1999

Specification Clause

The hyperplasticiser shall be GLENIUM SKY 787, high range water reducing, Superplasticiser based on polycarboxylic ether formulation. The product shall have minimum relative density of 1.11 & solid contents not less than 33% by weight. The product shall be able to demonstrate capability to offer Total Performance Control in Ready-mix concrete production by meeting the guidelines as per EN206-1.

Direction for use

GLENIUM SKY 787 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 GLENIUM SKY 787 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 GLENIUM SKY 787, of 60 seconds for forced action mixers is recommended.

Dosage

Optimum dosage of GLENIUM SKY 787 should be determined with trial mixes. As a guide, a dosage range of 500 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 required. In such cases, contact your local BASF representative.

Effects of over dosage

A severe over-dosage of GLENIUM SKY 787 can result in the following:

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

A slight overdosing may not adversely affect the ultimate strength of the concrete and can achieve higher strengths than normal concrete, provided it is properly compacted and cured. 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 BASF representative immediately.

Compatibility

GLENIUM SKY 787 is compatible with most of the POZZOLITH series products including POZZOLITH 55R. Use 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 BASF Technical Services Department.

Workability

GLENIUM SKY 787 ensures that rheoplastic concrete remains workable in excess of 90 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. It is strongly recommended that concrete should be properly cured particularly in hot, windy and dry climates.

The use of MASTERKURE 111CF, evaporation reducer to prevent quick moisture loss from the surface of the flat works such as pavements in the dry, windy and hot climates is highly recommended.

Packaging

GLENIUM SKY 787 is supplied in 225kg drums or in bulk on request.

Storage and Shelf life

GLENIUM SKY 787 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 BASF representative.

Safety 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 vapour 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. Do not reuse containers for storage of consumable item. For further information refer to the material safety data sheet. MSDS available on demand or on BASF construction chemicals web site.

Note

All BASF Technical Data Sheets are updated on regular basis; it is the user's responsibility, to obtain the most recent issue.

Field services where provided, does not constitute supervisory responsibility, for additional information contact your local BASF representative.

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