

# MasterGlenium<sup>®</sup> SKY 8784

PCE based superplasticiser for High Quality ready-mix concrete using Total Performance Control<sup>™</sup>

## DESCRIPTION

**MasterGlenium SKY 8784** is the superplasticiser based on second generation polycarboxylic ether polymers, developed using nano-technology. The product has been primarily developed for producing economical, high performance, high grade ready-mix concrete Total Performance Control<sup>™</sup>.

**MasterGlenium SKY 8784** is free of chloride & low alkali. It is compatible with all types of cements.

## RECOMMENDED USES

- To produce economical, high grade concrete (>M45) with minimum micro-silica or meta-kaolin
- MasterGlenium SKY 8784** is used for the production of high quality ready-mix concrete.
- MasterGlenium SKY 8784** may be used in combination with MasterMatrix 2 (formerly known as GLENIUM STREAM 2) for producing Rheodynamic Concrete, capable of self-compaction, even in the presence of dense reinforcement.

## FEATURES AND BENEFITS

**MasterGlenium SKY 8784** is based on **Total Performance Control<sup>™</sup>** 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 **MasterGlenium SKY 8784** 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.

**MasterGlenium SKY 8784** has a different chemical structure from the traditional superplasticisers based on PCE polymers (first generation PCE polymers). The second generation **MasterGlenium SKY 8784** is derived directly from the Total Performance Control<sup>™</sup> 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.

## PERFORMANCE TEST DATA

Aspect	Light brown liquid
Relative Density	1.10 ± 0.01 at 25°C
pH	≥6
Chloride ion content	< 0.2%

## TEST CERTIFICATION/APPROVALS

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

## DOSAGE

Optimum dosage of **MasterGlenium SKY 8784** should be determined with trial mixes. As a guide, a dosage range of 300 ml to 1200ml per 100kg of cementitious material is normally recommended. Because of variations in concrete materials, job site conditions, and/or applications, dosages

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outside of the recommended range may be required. In such cases, contact your local Master Builders Solutions representative.

### Effects of over dosage

A severe over-dosage of **MasterGlenium SKY 8784** 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 Master Builders Solutions representative immediately.

### APPLICATION

**MasterGlenium SKY 8784** 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 SKY 8784** 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 SKY 8784**, of 60 seconds for forced action mixers is recommended.

### SUGGESTED SPECIFICATION

The hyperplasticiser shall be **MasterGlenium SKY 8784**, high range water reducing, Superplasticiser based on polycarboxylic ether formulation. The product shall have minimum relative density of 1.10 & solid contents not less than 30% 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.

### COMPATIBILITY

**MasterGlenium SKY 8784** 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.

### WORKABILITY

**MasterGlenium SKY 8784** 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.

### PACKAGING

**MasterGlenium SKY 8784** is supplied in 245 kg drums or in bulk on request.

### STORAGE /SHELF LIFE

**MasterGlenium SKY 8784** 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 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.

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