

# MasterGlenium® SKY 8520

## Engineered waterproof concrete admixture with super retention technology

## DESCRIPTION

MasterGlenium SKY 8520 is a ready-to-use liquid admixture for use in concrete designed to disperse the cementitious components to minimise the capillaries in the matrix. MasterGlenium SKY 8520 is based on a highly concentrated, chloride-free integral waterproofing polymer with super retention technology.

**MasterGlenium SKY 8520** has the property of reducing the amount of water required to produce a desired workability. In addition, it prolongs the slump retention to over 2 hours and reduces water permeability significantly over control.

## Principle

When concrete cures, permeable voids are present even at low W/C ratios of 0.45 because the water required for hydration is only 24-26% by wt. of the cement. The ability to produce highly workable concrete at W/C below 0.35 means that these permeable voids are reduced (4.5% at 0.35 W/C ratio). At 0.33 W/C ratio, the permeable voids can be reduced to below 4%.

This means that there are negligible voids for filing and the need to develop additional crystal structure unnecessary. The concrete becomes totally watertight and has lower shrinkage potential due to the lower water and greater aggregate content. The wide dispersion of cement particles also results in less agglomeration and more efficient potential for autogenously healing fine cracks due to a progressive hydration of dehydrated exposed cement even after 28 days.

**MasterGlenium SKY 8520** provides this advantage through the use of synthetic dispersant polymers that are tailor made to meet the needs of watertight concrete systems.

#### **RECOMMENDED USES**

- MasterGlenium SKY 8520 is suitable for any concrete structure, which requires watertightness such as:
- Deep basement
- Tunnels, underpass, station boxes
- Water retaining structures, swimming pool, water tanks, water reservoir etc.
- Foundations, piles and pile caps
- Diaphragm wall, secant piles, contiguous bored pile

- Sea port, seal wall
- Dams
- · Drainage outfall to the sea
- Jetty, quay, piers, wharf
- Tunnel lining
- · Bridge / parking decks
- Concrete below ground on reclaimed land and land-fill sites
- Hydro-electric structure
- Waste water treatment plant and desalination plant

### **FEATURES AND BENEFITS**

**MasterGlenium SKY 8520** produces the following benefits to fresh and hardened concrete

- Enables concrete of the lowest permeable voids (<5%)</li>
- Improves impermeability
- Eliminates the need for other waterproof admixture
- · Increases workability and reduces segregation
- Allows very low W/C ratio with high workability
- Reduces unit water content by up to 40%
- Increases effectiveness of cement through dispersion
- · Lower long term shrinkage
- · Minimises risk of non-structural cracks
- Increases compressive strength
- Increases density
- · Eliminates bleed.

#### **TYPICAL PERFORMANCE DATA**

Compressive strengt 7 days : 45 N/mm<sup>2</sup>

28 days : 60 N/mm<sup>2</sup>

Concrete slump before placement : 200 mm

**Permeability** 

Co-efficient of permeability : <1 x 10<sup>-12</sup> m/s

(HDB test method – Singapore)

Water Penetration (DIN 1048) : ≤ 20mm

Note: Subject to trial as the properties of materials can vary.



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## **APPLICATION**

#### Dispensing

**MasterGlenium SKY 8520** should be added separately to the initial batching water to ensure complete distribution throughout the mix. Use only drinkable water- do not use sea water, bore water or water containing a high dissolved mineral of content, for mixing concrete.

When **MasterGlenium SKY 8520** is used, no other chemical admixture should be used at the same time without first consulting your local Master Builders Solutions representative

#### DOSAGE

The optimum dosage for **MasterGlenium SKY 8520** to meet a specific requirement should always be determined by trial mixes.

Recommended dosage rate is 1.0 to 1.6 litres per 100 kg of cement. Other dosages may also be used depending on the specific requirements.

## **CURING**

Like all cementitious products, concrete made with **MasterGlenium SKY 8520** must be protected against rapid drying due to high temperature and/or strong wind.

The use of wet burlap, plastic sheets or a curing compound is highly recommended.

#### **PACKAGING**

**MasterGlenium SKY 8520** is available in bulk and 205L drums.

## SHELF LIFE

**MasterGlenium SKY 8520** can be stored for 12 months if stored at temperature above 0oC in tightly sealed original drums. If found to be frozen, thaw it and reconstitute by stirring.

#### **PRECAUTIONS**

Health: **MasterGlenium SKY 8520** does not contain any hazardous substances requiring labelling.

It is safe for use with standard precautions followed in the construction industry, such as use of hand gloves, safety goggles, etc.

For detailed Health, Safety and Environmental Recommendations, please consult and follow all instructions on the product Material Safety Data Sheet.

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#### SG#MasterGlenium SKY 8520 v2- 03.2021

## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability, or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

#### 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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