

# MasterPolyheed<sup>®</sup> 8861

New generation mid-range water reducer

## DESCRIPTION

**MasterPolyheed 8861** is a multi-component, non-chloride, mid-range water reducing admixture designed to improve the performance of concrete both in the plastic and hardened states.

MasterPolyheed 8861 is a versatile admixture able to produce mid-range slumps without retardation. Its formulation contains materials able to improve the concrete's rheology, strength and finishability..

## RECOMMENDED USES

- All types of concrete where a non-chloride water reducing admixture is required, especially in the slump band (80-150mm)
- Improving the performance of pumped concrete, shotcrete and conventionally placed concrete
- Ready mixed concrete using manufactured sands
- Long-distance transporting
- Pumped concrete
- High workability without segregation or bleeding
- High performance concrete for durability

## FEATURES AND BENEFITS

- Good dispersion in mixes with high manufactured sand contents
- High workability for longer periods
- Lower pumping pressure with manufactured sands
- Resistance to segregation even at high workability
- Extended setting with longer workability
- Reduced water content for a given workability
- Higher ultimate strengths
- Increased ease in finishing concrete with poor aggregates / gap graded aggregates

Chemistry and mechanism of action is what differentiates **MasterPolyheed 8861** from the traditional admixtures, being a new, unique mechanism of action that greatly improves the effectiveness of cement dispersion coupled with rheology improvement.

Traditional plasticisers based on melamine and naphthalene sulphonates are polymers which are

absorbed by the cement granules and in presence of manufactured sands require higher dosage for effectiveness.

With this admixture, the polymers wrap around the cement granules 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.

**MasterPolyheed 8861** has a different chemical structure from the traditional plasticisers. It consists of a carboxylic ether polymer with long side chains. At the beginning of the mixing process it initiates the same electrostatic dispersion mechanism as the traditional plasticisers, but the side chains linked to the polymer backbone generates a steric hindrance which greatly stabilises the cement particles' ability to separate and disperse. Steric hindrance provides a physical barrier (alongside the electrostatic barrier) between the cement grains.

With this process, flowable concrete with greatly reduced water content with better rheology is obtained with **MasterPolyheed 8861**.

## QUANTITY TO USE

**MasterPolyheed 8861** is a versatile admixture with a dose rate of 700 to 2000 mls per 100kg of cementitious material. An increase in dose rate results in an increase in water reduction.

The improved pumpability and rheology aspects of **MasterPolyheed 8861** are enhanced with increasing dose rate. The correct dosage rate in each instance should be determined by correctly conducted trials under the supervision of a Master Builders Solutions Technical Sales Representative.

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## CAUTION

**MasterPolyheed 8861** HAS A SYNERGISTIC EFFECT WITH AIR ENTRAINING AGENTS (AEA) WHICH MAY PRODUCE UP TO FOUR TIMES THE VOLUME OF ENTRAINED AIR.

## DISPENSING

### Direction for use

**MasterPolyheed 8861** 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 **MasterPolyheed 8861** to dry aggregate or cement is not recommended.

## COMPATABILITY

**MasterPolyheed 8861** is not compatible with admixtures containing sulfonated naphthalene formaldehyde condensates (BNS).

**MasterPolyheed 8861** can be used with other Master Builders Solutions admixtures to achieve cost effective customised performance. However, those admixtures should be dispensed separately and added separately to ensure complete distribution throughout the mix.

**MasterPolyheed 8861** should not be used in conjunction with other admixtures unless specific test information is available.

## PACKAGING

**MasterPolyheed 8861** is supplied in 1000 litre pallecons and bulk delivery

## STORAGE / SHELF LIFE

Keep only in the original container in a cool, well-ventilated place. Protect from direct sunlight. Store protected against freezing.

**MasterPolyheed 8861** has a shelf life of 12 months.

## PRECAUTIONS

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the Master Builders Solutions Material Safety Data Sheet (MSDS) from our office or our website.

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## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this 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 MBCC Group either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not MBCC Group, are responsible for carrying out procedures appropriate to a specific application.

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