

MasterPolyheed[®] 8760

Water-reducing, high range, and retarding admixture based on modified poly-carboxylic ether

DESCRIPTION

MasterPolyheed 8760 is an admixture of a new generation based on modified poly-carboxylic ether. The product has been primarily developed for applications in Ready-mix & Site-batched concrete where the highest performance is required.

RECOMMENDED USES

- Ready mixed & Site mix Concrete
- Long-distance transporting
- Pumped concrete
- High workability without segregation or bleeding
- High performance concrete for durability
- Mixes requiring >20% water reduction
- Concrete containing pozzolans such as microsilica, GGBFS, PFA including high volume fly ash concrete

FEATURES AND BENEFITS

- Good dispersion even in mixes with high cementitious fines
- Retains workability for long periods
- Lower pumping pressure
- Resistance to segregation even at high workability
- Reduced water content for a given workability
- Higher ultimate strengths
- Increased ease in finishing concrete

Chemistry and mechanism of action

What differentiates **MasterPolyheed 8760** 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.

MasterPolyheed 8760 has a different chemical structure from the traditional superplasticisers. It consists of poly-carboxylic ether with long side chains. At the beginning of the mixing process it initiates the same electrostatic dispersion mechanism as the traditional superplasticisers, 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 is obtained.

PERFORMANCE TEST DATA

Aspect	Light to dark reddish-brown liquid
Relative Density	1.09 ± 0.02 at 25°C
pH	>6
Chloride ion content	< 0.2%

TEST CERTIFICATION/APPROVALS

- ASTM C494 Types B, D & G
- IS 9103

DOSAGE

Optimum dosage of **MasterPolyheed 8760** should be determined with trial mixes. As a guide, a dosage range of 500ml to 1800ml 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 Master Builders Solutions representative.

For addition information on **MasterPolyheed 8760** admixture or on its use in developing concrete mixes with special performance characteristics, contact your local Master Builders Solutions representative.

Effects of over dosage

A severe over-dosage of **MasterPolyheed 8760** can result in the following:

- Extension of initial and final set
- Bleed/segregation of mix

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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

MasterPolyheed 8760 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 8760** to dry aggregate or cement is not recommended.

Thorough mixing is essential and a minimum mixing cycle, after the addition of the **MasterPolyheed 8760**, of 60 seconds for forced action mixers is recommended.

SUGGESTED SPECIFICATION

The Superplasticiser shall be **MasterPolyheed 8760**, high range water reducing based on modified poly-carboxylic ether. The product shall have minimum specific gravity of 1.07. The product shall comply with ASTM C494 Type B, D & G and shall be free of naphthalene salts and melamine when subjected to IR Spectra.

COMPATIBILITY

MasterPolyheed 8760 is compatible with most of the products under the MasterPozzolith & MasterSet series including MasterSet RT 55. Use MasterMatrix 102 as viscosity modifying agent in self compacting concrete.

MasterPolyheed 8760 is not compatible with Melamine or Naphthalene based admixtures and should not be used in conjunction in the same mix. **MasterPolyheed 8760** is compatible with lingosulphonates and carboxylic acid-based plasticizer and retarders and also with most type of air entrainers, accelerators, retarders, extended set control admixtures, corrosion inhibitors, and shrinkage reducers. **MasterPolyheed 8760** is also

compatible with slag and pozzolans such as fly ash, metakaolin and silica fume

CORROSIVITY – NON CORROSIVE

MasterPolyheed 8760 admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any calcium chloride-based ingredients are used in the manufacture of **MasterPolyheed 8760** admixture. In all concrete application, **MasterPolyheed 8760** admixture will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices

WORKABILITY

MasterPolyheed 8760 ensures that rheoplastic concrete remains workable for 90 minutes. 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

MasterPolyheed 8760 is supplied in 245 kg drums or in bulk on request.

STORAGE /SHELF LIFE

MasterPolyheed 8760 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. 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,

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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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