



Mix Plast 4000

TECHNICAL DATA SHEET

High range water reducing / super-plasticising, admixture for precast and high performance concrete

DESCRIPTION

Mix Plast 4000 is a new age admixture based on second generation poly-carboxylic ether with high early strength gains. This product is compatible with all types of cements and also free from chloride while maintaining low alkali content.

ADVANTAGES

- ❖ Achieve high early strengths
- ❖ Eliminate heat curing
- ❖ Eliminate the energy required for placing, compacting & curing
- ❖ Produces Rheoplastic and Rheodynamic concretes having a low water cement ratio
- ❖ Increase productivity/ reduction in cycle time
- ❖ Improve surface appearance
- ❖ Produce durable precast concrete elements
- ❖ Optimise curing cycles by reducing curing time or curing temperatures
- ❖ Improved engineering properties, compared to traditional super-plasticiser such as early and ultimate compressive and flexural strengths, reduced shrinkage and low permeability

USES

- ✓ Making precast concrete elements maintaining fluent workability all through without segregation and having fluid consistence, low water binder ratio and, consequently providing high early and long term strengths.
- ✓ Concrete works in cold weather.

Chemistry and mechanism of action

What sets Mix Plast 4000 apart from the conventional PCE polymer based super-plasticisers is a new molecule which has been tailored using nano-technology to provide optimal efficacy of cement dispersion with minimum hindrance to the hydration process.

It contains carboxylic ether polymer with long side chains and at the same time short main chains. At the beginning of the mixing process it initiates the same electrostatic dispersion mechanism as the conventional hyper-plasticisers, but the short main chains facilitate quick start of hydration process. Along with efficient dispersion effect, rapid absorption of the molecule onto

the cement particles maintains workability yet exposes increased surface of the cement grains to react with water. Resulting in ensuring earlier development of the heat of hydration, rapid strength development of the hydration products and subsequently higher strengths at a very early age.

TEST CERTIFICATION & APPROVALS

- ASTM C494 Type A & F
- EN 934-2 T3.1/3.2
- IS 9103:1999

PERFORMANCE TEST DATA

Aspect	Light free-flowing liquid
Relative Density	1.1 ± at 25°C
pH	6 ±
Chloride ion content	< 0.2%

DOSAGE

Optimum dosage of Mix Plast 4000 should be determined with trial mixes. As a general guideline, a dosage 1500 gm per 100 kg of cementitious material is usually recommended. Due to the variations in concrete ingredients, job site conditions, applications dosages outside of the recommended range may be required. In such cases, consult with your local Mix&Fix representative.

For further information on Mix Plast 4000 admixture or on its use in developing concrete mixes with special performance characteristics, contact your local Mix&Fix representative.

EFFECTS OF OVER DOSAGE

A severe over-dosage of Mix Plast 4000 can result in the following:

- ❖ Segregation or bleeding of mix
- ❖ Loss of workability
- ❖ Air entrainment
- ❖ Increase in plastic shrinkage

Slight overdosing may not negatively affect the ultimate strength of the concrete and still can achieve higher

strengths than regular concrete, provided that, it is properly compacted and cured. Appropriate allowance should be made for the effect of fluid concrete pressure on form work, and stripping times should be strictly monitored.

In the event of over dosage, consult your local Mix&Fix representative immediately.

SPECIFICATIONS

Mix Plast 4000 with high range water reducer is based on polycarboxylic ether polymer. This product shall have minimum specific gravity of 1.08 with at least 36% solid contents by weight. It complies with ASTM C494 Type A & F and shall be free of lignosulphonates, naphthalene salts and melamine formaldehyde when subjected to IR Spectra.

APPLICATION

Mix Plast 4000 is a ready-to-use liquid which is dispensed into the concrete along with the mixing water. Higher plasticising effect and water reduction can be achieved if the admixture is added to the damp concrete after 70% to 90% of the mixing water has been already added. The addition of Mix Plast 4000 to dry aggregate or cement is not recommended.

Thorough mixing is mandatory and a minimum 60 seconds mixing cycle, after the addition of the Mix Plast 4000 for forced action mixers is strongly advised.

COMPATIBILITY

Mix Plast 4000 must not be used in combination with any other admixture.

WORKABILITY

Mix Plast 4000 ensures that concrete remains workable for over 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.

NON CORROSIVE

Mix Plast 4000 admixture will neither initiate nor promote corrosion of reinforcing steel embedded in concrete, pre-stressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any calcium chloride-based ingredients are used in the production of Mix Plast 4000 admixture. In all concrete applications, Mix Plast 4000 admixture will conform to the most stringent or minimum chloride ion limits currently suggested by construction industry standards and practices worldwide.

STORAGE /SHELF LIFE

Mix Plast 4000 must be stored above 5°C. If product has frozen, thaw at 5°C or above and completely reformed via 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.

If the recommended storage conditions are not maintained, then in may result in premature deterioration of the product and/or packaging. For specific storage advice consult your local Mix&Fix representative.

PACKAGING

Mix Plast 4000 is supplied in 225 Kg, 1000 Kg or bulk on request.

SAFETY

Similar to all chemical products, care must be taken during use and storage to avoid contact with eyes, mouth, skin and food. This safety should be maintained till the curing process is complete. Splashes to eyes and skin must be treated 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 edible items.

OTHER SERVICES

For price analysis, specifications, supplementary brochures, references, reports, and technical assistance, please visit the website or contact bmc.com.bd@gmail.com

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For further information, please consult the expert technicians of Mix & Fix. The technical advice on how to use our products, whether written or verbally given, is based on the current state of our scientific and practical expertise and does not imply the assumption of any guarantee and/or responsibility for the final results of works executed using our products. Therefore, the customer is not exempt from the exclusive task and responsibility of verifying the suitability of our products for the intended use and purposes. This version supersedes all previous versions.