

# NOVAMIX 3000

## High range Water reducing Superplasticiser for High Performance Concrete

### Description

**Novamix 3000** is an admixture based on fourth generation hybrid polycarboxylic ether polymer with high early strength gains. **Novamix 3000** is free of chloride and low alkali. It is compatible with all types of cement. It is in-built with viscosity modifying agent which helps in the production of concrete with enhanced viscosity and controlled rheological properties.

### Recommended Uses

- ✓ **Novamix 3000** is suitable for making durable concrete elements at all workability including super workable concrete having fluid consistence, no segregation, a low water binder ratio and consequently high early and long-term strengths.
- ✓ **Novamix 3000** is capable of self-compaction, even in the presence of dense reinforcement without the aid of vibration, for making precast elements.
- ✓ Concreting in cold weather

### Features and Benefits

- ✓ Achieves high early strength
- ✓ Produces free-flow concrete with low water/cement ratio
- ✓ Optimises curing cycle by reducing curing time or curing temperature
- ✓ Eliminates heat curing
- ✓ Increases productivity
- ✓ Reduces cycle time
- ✓ Improves surface appearance
- ✓ Produces durable precast concrete elements
- ✓ Improves engineering properties, compared to traditional superplasticiser such as early and ultimate compressive and flexural strengths, reduced shrinkage, and low permeability.

### Chemistry and Mechanism of Action

**Novamix 3000** has a different chemical structure from the traditional Polycarboxylic Ether (PCE) polymer-based superplasticisers. The base PCE molecule used to formulate **Novamix 3000** was custom-made using nanotechnology to enable effective dispersion with minimum hindrance to hydration process. It consists of a carboxylic ether polymer with long side chains and short main chains.

At the beginning of the mixing process, it initiates the same electrostatic dispersion mechanism as the traditional hyper plasticisers, but the short main chains facilitate quick start of hydration process. Rapid absorption of the molecule onto the cement particles, combined with an efficient dispersion effect maintains workability yet exposes increased surface of the cement grains to react with water.

As a result of this effect, it is possible to obtain earlier development of the heat of hydration, rapid strength development of the hydration products and consequently, higher strengths at a very early age.

### Technical Properties

Form	Light brown free-flowing liquid
pH	≥ 6
Chloride content	< 0.2%

### Test Certification/Approvals

- ✓ ASTM C494 Type F
- ✓ IS 9103:1999
- ✓ AASHTO M 194

### Dosage

Optimum dosage of **Novamix 3000** should be determined in trial mixes.

**Dosage range:** 0.2% to 1.5% weight of cementitious material.

## Effects of Overdosage

A severe over-dosage of **Novamix 3000** can result in the following:

- ✓ 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 formwork, and stripping times should be monitored.

In the event of over dosage, consult CCI chemicals immediately.

## Application

**Novamix 3000** 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 70% to 90% of the mixing water has been added. The addition of **Novamix 3000** 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 **Novamix 3000**, of 60 seconds for forced action mixers is recommended.

## Compatibility

**Novamix 3000** is compatible with all types of cement.

## Packaging

**Novamix 3000** is supplied in 230 kg HDPE barrels and in bulk tankers on request.

## Storage & Shelf life

**Novamix 3000** 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** – 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 CCI chemicals.

## 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 items.

## Safety

Before use, refer to the Material Safety Data Sheet (MSDS). The MSDS is available on [www.ccichemicals.in](http://www.ccichemicals.in) or contact us at [info@ccichemicals.in](mailto:info@ccichemicals.in).

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