

NEON+®



High Range Water-Reducing Admixture

Polycarboxylate-based plasticizers are powerful water reducers that reduce the water/cement ratio while maintaining concrete flow and slump. NEON+ is a concrete hyperplasticizer used mainly in precast concrete production. After addition during batching, its dispersing action separates cement particles and prevents their agglomeration.

Approvals / Standards

- ASTM C494 - Type F
- ASTM C1017 - Type I
- ACI 212.3R-16

Applications

- LNG reservoirs, rapid-transit railroads, highways, subways, tunnels and bridges.
- Self-compacting concrete; high-rise buildings requiring high durability; offshore and marine structures.
- Precast and prestressed elements and other high-early-strength applications, including concrete blocks, paving stones, segmental retaining-wall units, roof tiles, dry-cast concrete pipes and hollow-core planks.
- Improving the workability of site-mixed and precast concrete without increasing water demand; reducing the water/cement ratio while maintaining slump and flowability.
- Concrete containing silica fume, where prevention of powder agglomeration is required.
- Pumping through reinforced sections with less wear on concrete-conveying equipment and reduced project costs.

Mixing

For maximum efficiency, add NEON+ admixture after wetting of aggregates and cement, and after at least 75% of final mix water has been added. Allow at least 90 seconds of mixing after addition of NEON+ admixture.

Application during concrete production

- Use NEON+ during concrete production by mixing the specified quantity with part or all of the mixing water. This helps distribute the admixture throughout the mix and obtain the required strength and durability.
- Add after the cement so that the admixture can act on the cement and provide the required performance.

Dosage

The dosage of NEON+ is 0.1-0.7% by mass of total cementitious materials. The typical dosage is 0.4% on the same basis.

Determine the exact dosage according to project requirements and the required strength and flowability.

Other dosages may be recommended for specific site conditions. Trial mixes are highly recommended to determine the optimum dosage for the required performance.

Compatibility

Compatible with concrete containing silica fume, fly ash or ground granulated blast-furnace slag cement. Add other admixtures separately. Always trial product combinations in the specific mix and consult RAMKA Technical Services about specific combinations.

Effect of Overdosing

Overdosage may delay setting and cause bleeding.

- Accelerating early-age strength development and increasing strength at all ages by substantially reducing water demand.
- Improving durability through increased ultimate strength and reduced permeability.

Features

- Cement dispersion agent.
- Provides improved material flow and extrusion characteristics.

Advantages / Benefits

- High water reduction at low water/cement ratios and high performance at low dosage; economical concrete mix designs.

- Easier formwork removal from precast concrete.
- Improved mortar plasticity, concrete bond to reinforcement and cohesion between concrete particles and aggregates; low viscosity and good handling properties.
- Improves concrete setting time.
- Increases early and ultimate compressive strength with normal setting; increases flexural strength and strength during the first hours after placing.
- Improved concrete durability and rheology with lower permeability.

Product Information

Chemical Base	Polycarboxylate ether
Homogeneity	Homogenized
State	Liquid
Packaging	20KG Plastic Can / 1100KG IBC Container
Alkali Content (Na₂O Equivalent)	<3% by mass
Chloride Content	<0.1%
Freezing temperature	-3°C
Appearance / Color	Colourless and transparent
Shelf Life	12 months from date of production if stored properly in undamaged unopened, original sealed packaging
Storage Condition	Store in dry conditions at temperatures between +10°C and +30°C. Protect from direct sunlight and frost.
Density	1.08 ± 0.03 g/cm ³ at 20°C
PH-Value	3-6
Air content increase	Typically, less than 2% additional air is entrained at normal dosages.
Recommended Dosage	0.1-0.7% by mass of total cementitious materials; usual 0.4% on the same basis

- Uniform concrete that is easy to vibrate, with improved compactability.
- Reduced drying shrinkage and creep.
- Higher productivity and production rates, lower labour costs and increased overall profitability.
- Reduced breakage and rejected units.
- Potential cement reduction.
- Longer service life of moulds and machine parts.

Effects

In addition to its fresh-concrete effects during mixing and casting, NEON+ increases ultimate compressive and flexural strengths, E-modulus and adhesion to reinforcing and stressing steel. It improves carbonation resistance, resistance to aggressive atmospheric conditions and durability, and reduces permeability, shrinkage and creep.

Storage

Store dry in original containers under cover at +10°C to +30°C, protected from direct sunlight, frost and extreme temperatures. If frozen, gradually thaw and agitate until completely reconstituted. Failure to follow these conditions may prematurely deteriorate the product or packaging. Contact RAMKA Technical Services for specific storage conditions.

Basis of Data

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.



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Health and Safety

NEON+ does not fall into the hazard classifications of current regulations. However, it should not be swallowed or allowed to come into contact with skin and eyes. Suitable protective gloves and goggles should be worn. Splashes on the skin should be removed with water. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. If swallowed, seek medical attention immediately; do not induce vomiting. Please refer to the Material Safety Data Sheet (MSDS).

Fire

NEON+ is water based and non-flammable.

Cleaning and disposal

Spillages of NEON+ should be absorbed onto sand, earth or vermiculite and transferred to suitable containers. Remnants should be hosed down with large quantities of water. Excess or waste material should be disposed of in accordance with local legislation under the guidance of the local waste regulatory authority.

Additional Information

For additional information on NEON+ admixture, consult your local sales representative.

Important Notes: The information, and, in particular, the recommendations relating to the application and end-use of RAMKA products, are given in good faith based on RAMKA's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with RAMKA's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. RAMKA reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.