NEON®

High Range Water-Reducing Admixture

RAMKA
CONSTRUCTION
CHEMICALS

NEON® is a concrete hyperplasticizer for high-strength concrete, precast concrete and batching plants at the project site. It provides high water reduction at very low water/cement ratios. When introduced with the mixing water, it disperses cement particles.

Approvals / Standards

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

Applications

- High-quality concrete with a reduced water/cement ratio.
- High-strength concrete.
- Precast concrete and concrete produced at batching plants.
- Concrete containing silica fume.
- Preventing silica-fume powder agglomeration in concrete.
- Easier pumping and passage through heavily reinforced sections.
- Increasing concrete strength by up to 45%.
- Reducing concrete water demand by up to 40% at constant flowability.
- Precast concrete tiles and tunnel segments; prestressed elements; post-tensioned concrete bridge segments; blocks and interlocks.

Features

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

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

- Add NEON during concrete production. Cement must already have been introduced, because addition before cement can cause absorption by aggregates and reduce effectiveness.
- Mix NEON with part of the specified mixing water before addition. Adding the concentrated product without this dilution makes distribution throughout the concrete more difficult.

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 water reduction, 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

NEON is compatible with concretes containing silica fume, fly ash or ground granulated blast-furnace slag cement. Add other admixtures separately. Always conduct trials before combining products in a specific mix and contact our Technical Services Department for information on specific combinations.

Advantages / Benefits

- High performance at low dosage.
- Facilitates formwork removal from concrete elements.
- Helps prevent aggregate segregation.
- Improves bond between concrete and reinforcement.
- Facilitates compaction and vibration.
- Reduces permeability.
- Increases early-age strength.
- High water reduction, allowing very low water/cement ratios.
- Low concrete viscosity.
- Economical concrete design.
- Increases early and ultimate compressive strength with normal setting.
- Improves concrete durability and rheology.
- Good handling properties.
- Reduces drying shrinkage and creep.

Effect of Overdosing

Overdosage may delay setting and cause bleeding and segregation.

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 +40°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

Effects

While mixing and casting, it has significant positive effects on hardened concrete such as increasing ultimate compressive and flexural strengths, higher E-modulus, improving adhesion to reinforcing and stressing steel, better resistance to carbonation, lower permeability, better resistance to aggressive atmospheric conditions, reducing shrinkage and creep and increasing durability.

Storage

Store in dry conditions at temperatures between +10°C and +40°C. Protect from direct sunlight and frost. Keep in original containers under cover, out of direct sunlight and protected from extremes of temperature. If frozen, gradually thaw and agitate until completely reconstituted. Failure to comply with recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage conditions contact RAMKA Technical Services Department.

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.

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 our Technical Services Department.

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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.