UNIX®

High Range Water-Reducing Admixture

RAMKA
CONSTRUCTION
CHEMICALS

UNIX® is a high-water-reducing artificial-stone resin for cement plast and polymer mosaic. This powerplasticizer improves concrete flexural and compressive strength and reduces water absorption in concrete floor and wall products. It improves mortar filling, provides longer workability retention and a cohesive, plastic consistency, allowing denser, higher-quality products to be produced.

Applications

- Concrete and mortar with a low water-to-cement ratio
- Extended mortar workability
- Improved mortar plasticity
- Polymer mosaic with low water absorption
- Vibrated precast concrete
- Artificial and antique stone
- Exposed concrete
- Improved concrete and mortar filling
- Vibrated wall and floor coverings
- Polymer gypsum products

Approvals / Standards

- ASTM C494 - Type G
- ASTM C1017-Type II
- ACI 212.3R-16

Advantages / Benefits

- Up to 45% higher concrete strength at equal flowability
- Up to 40% less mortar mixing water at equal flowability
- Use with silica fume, fly ash and other pozzolans

Guideline for Use

Add UNIX after the cement.

Preferably dilute the resin with water before adding it to the mix.

As the resin reduces the mortar water requirement, avoid excess water that can cause bleeding and segregation.

Dosage

0.1 to 0.9% by mass of total cementitious materials. Determine the dosage from required water reduction, strength and flowability, allowing for constituent properties. White cement may require a higher dosage; more rounded aggregate may reduce it. The usual dosage for artificial stone and polymer mosaic is 0.5% by mass of total cementitious materials.

Compatibility

UNIX is compatible with concretes containing silica fume, fly ash, or ground granulated blast or slag cement. In case of requirement of utilizing other admixtures in concrete, it is highly recommended to add them separately. Always conduct trials before combining products in specific mixes and contact our Technical Service Department for information about specific combinations.

Effect of Overdosing

Over dosage may cause delay in the setting time, bleeding and segregation problems.

- Accelerated winter concrete and mortar setting
- Earlier demoulding
- Reduced air entrapment in cement mortars
- Increased early concrete and mortar strength
- High efficiency at a low dosage
- Improved gloss of mosaic and cement-plast products
- Increased durability of mosaic and artificial stone

Features

Cement dispersion agent.

Provides improved material flow and extrusion characteristics.

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.

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, transparent yellow
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	3-7
Air content increase	Typically, less than 2% additional air is entrained at normal dosages.
Recommended Dosage	0.1-0.9% by mass of total cementitious materials; usual 0.5% on the same basis

Storage

This product must be stored in original containers at +10°C to +40°C 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 the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage condition 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

UNIX 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.

Refer to the Safety Data Sheet (MSDS).

Fire

UNIX is water based and non-flammable.

Cleaning and disposal

Spillages of UNIX should be absorbed onto sand, earth or vermiculite and transferred to suitable containers. Remnants should be hosed down with large quantities of water. The disposal of excess or waste material should be carried out in accordance with local legislation under the guidance of the local waste regulatory authority.

Additional Information

For additional information on UNIX 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.