

SMART®

High Range Water-Reducing Admixture



SMART® is a high performance superplasticizer for ready-mix concrete designed for the production of wide range of concrete mixes from conventional to self consolidating concrete.

Applications

- LNG reservoir, Rapid-transit railroads, Highways, Subways, Tunnels, Bridges
- Self-compacting concrete
- High-rise buildings with high durability
- Off-shore and marine structures
- Pre-cast and pre-stressed elements
- To provide excellent acceleration of strength gain at early ages and major increases in strength at all ages by significantly reducing water demand in a concrete mix.
- Particularly suitable for precast concrete and other high early strength requirements.
- To significantly improve the workability of site mixed and precast concrete without increasing water demand.
- To provide improved durability by increasing ultimate strengths and reducing concrete permeability.
- Concrete blocks
- Paving stones
- Segmental retaining wall units
- Concrete roof tiles
- Dry-cast concrete pipes
- Hollow-core planks

Approvals / Standards

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

Features

- Light to moderate swipe texture
- Cement dispersion agent
- Provides improved material flow and extrusion characteristics

Advantages / Benefits

- High water reducing ability (Low W/C)
- Improved concrete setting time
- Low concrete viscosity
- Economical concrete design
- Increase early and ultimate compressive strength with normal setting.
- Excellent concrete durability and rheology
- Lower permeability
- Excellent handling properties
- Lowers drying shrinkage and creep
- Increased productivity, resulting in reduced labor costs
- Increases production rate
- Increases compressive and flexural strengths
- Improves compactability
- Reduces breakage and culls
- Potential cement reduction
- Extends life of molds and machine parts
- Increases overall profitability

Guideline for Use

Mixing

For maximum efficiency, add SMART 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 SMART admixture.

Dosage

Dosage rates vary depending upon the amount of plasticity and/or water reduction desired.

Recommended dosage ranges from 0.1 To 0.9 kg per 100 kg of total cementitious material. Other dosages may be recommended in special cases according to the specific site conditions. It is highly recommended that trial mixes be prepared to determine the optimum dosage for your specific performance requirements.

Compatibility

SMART 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 and bleeding problems.

Effects

Besides stated effects of this admixture on fresh concrete while mixing and casting, it also has significant positive effects on hardened concrete such as increasing ultimate compressive and flexural strengths, higher E-modulus, improving adhesion to reinforcing and

Product Information

Chemical Base	Polycarboxylate Ether
Homogeneity	Homogenized
State	Liquid
Packaging	20KG Plastic Can / 1100KG IBC Container
Alkali Content (Na₂O Equivalent)	< 4.0 %
Chloride Content	< 0.1%
Corrosion Behavior	-
Appearance / Color	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 kg/l at 20°C
PH-Value	3-6
Air Entrainment	Typically, less than 2% additional air is entrained at normal dosages.
Recommended Dosage	0.1 – 0.9% by weight of cementitious

stressing steel, better resistance to carbonation, lower permeability, better resistance to aggressive atmospheric conditions, reducing shrinkage and creep and increasing durability.

Storage

This product must be stored in original containers at above +5 °C under cover, out of direct sunlight and protect 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 White Damavand 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.

Precautions

Health and Safety

SMART 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.

Fire

SMART is water based and non-flammable. Cleaning and disposal Spillages of SMART 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 SMART admixture, consult your local sales representative.

Important Notes

The information, and, in particular, the recommendations relating to the application and end-use of ALPAKA products, are given in good faith based on ALPAKA's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with ALPAKA'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. ALPAKA 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.