OMEGA®

HIGH PERFORMANCE SILICA FUME GEL

RAMKA
CONSTRUCTION
CHEMICALS

OMEGA® is a silica-fume power gel for producing durable, low-permeability concrete. It combines polycarboxylate superplasticizers with silica-fume pozzolan to increase concrete compaction, resist ingress of aggressive agents and improve fresh-concrete rheology and hardened-concrete quality. It increases compressive, tensile, flexural and impact strength.

Applications

- High-strength concrete (HSC)
- Concrete with very low permeability
- Concrete for heavily trafficked routes
- Water-retaining and hydraulic structures
- Structures exposed to freeze-thaw cycling
- Structures exposed to aggressive ions
- High-quality concrete for bridges, parking structures and dams

Approvals / Standards

- Silica fume refs: ASTM C1240 / INSO 13278.
- ASTM C494

Advantages / Benefits

- Silica fume reacts with lime and fills concrete pores, increasing strength and reducing permeability
- The plasticizer reduces the water-to-cement ratio and improves strength and durability
- Increased concrete flowability and workability
- Extended fresh-concrete workability
- Reduced wear of concrete-placement equipment
- Up to 20% lower cement content at equal compressive strength

Guideline for Use

Add OMEGA to the truck mixer after aggregate, cement and water have been fully mixed.

Alternatively, blend OMEGA with part or all of the concrete mixing water before addition to improve dispersion.

Dosage

Normally 3 to 6% by mass of cement. Determine the exact dosage for the project and concrete mix through site trials; adjust it according to the required concrete properties.

Compatibility

OMEGA is compatible with all known Portland cements manufactured under ASTM specifications. Always conduct trials before combining products in specific mixes and contact our Technical Service Department for information about specific combinations.

- Increased compressive and abrasion resistance
- Reduced thermal and shrinkage cracking

Effects

OMEGA reacts chemically within a cementitious matrix to increase the amount of calcium silicate hydrate (CSH gel) that is formed (pozzolanic reaction). The CSH gel is the bonding agent that holds the matrix of the cementitious mixture together in the hardened state. The additional CSH gel due to silica fume increases strength and decreases permeability.

Storage

Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect from direct sunlight. 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

OMEGA 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.

Product Information

State	Thick gel
Packaging	25 kg pail
Chloride Content	Chloride ion-free
Corrosion Behavior	-
Appearance / Color	Grey
Shelf Life	12 months from date of production if stored properly in undamaged unopened, original packaging.
Air content increase	<2% (increase, not total air content)
Alkali content	<5 g Na2O equivalent/L
Storage Condition	Store in dry conditions at temperatures between +10°C and +30°C. Protect from direct sunlight and frost.
PH-Value	3-6
Recommended Dosage	3-6% by mass of cement
Density	1.45 ± 0.05 g/cm^3 at 20°C
Chemical base	Polycarboxylate ether and silica fume

In case of contact with eyes rinse immediately with plenty of water and seek medical advice.

Refer to the Safety Data Sheet (MSDS).

Additional Information

For additional information on OMEGA admixture, consult our Technical Services Department.

References (continued)

ASTM C1202; BS 1881-122; BS EN 12390-8; INSO 2930.

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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.