

Description

Microsilika Gel (B.C 121) is used as a mineral additive with special pozzolanic properties to produce concrete with high resistance, more durability and efficiency, and less permeability (up to 20 times less than normal concrete). This product increases the resistance of concrete against chemical solutions (especially chlorine ions) and reduces the corrosion intensity of reinforced concrete. Silica nanoparticles operate in two areas:

A. Chemical effect: Silica pozzolanic reactions with calcium hydroxide lead to the formation of more C-S-H gel in the final stages, as a result, these nanoparticles fill the structural cavities of C-S-H gel and act as nuclei for super strong bonds with C-S-H gel particles. . Silica nanoparticles reduce the rate of calcium leaching in the cement matrix and thus make it more durable.

B. The second function of the particles is its physical characteristics: micro and nano silica particles are hundred times smaller than cement particles so they are able to fill all the holes in the hydrated cement paste. The final density of concrete is increased and this microstructure improvement causes to decrease concrete permeability.

Reference standards

- ASTM C1202
- BS EN 12390-8
- BS 1881-122

Application

- Production of concrete with high compressive, tensile, flexural strength, abrasion, mechanical and chemical resistance.
- Production of concrete resistant in environmental corrosion such as chlorine ions and sulfated soils.
- Production of waterproof and impermeable concrete for different projects such as dam construction and large water storage tanks.
- Concrete production for factories that producing prefabricated concrete parts.

FEATURES / ADVANTAGES

- Increasing durability against melting, freezing cycles and high temperature environments,
- Increasing durability in the presence of deicing salts,
- Reducing the permeability of concrete,
- Reduction of cement consumption and heat of hydration,
- Reducing the destructive reaction of alkalis with aggregate, reduction of



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**BETON
CHIMIE**

ISO 90001 : 2015

تلفن :

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کد پستی :

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carbonation and shrinkage resulting from it,

- Reducing the effect of harmful chemical agents, the severity of reinforcement corrosion,
- Reducing the penetration of harmful agents such as chlorine and hydroxide,
- Increasing adhesion between reinforcement and concrete,
- Reduction of seams resulting from contraction,
- Reducing the volume, weight and **cost** of the structure also increasing the durability and life service of the structure,
- Increasing modulus of elasticity and fast pozzolanic reaction,
- Reducing water leakage and improving pumping ability.

TECHNICAL INFORMATION

Microsilica gel is a partial cement substitution that contain concrete superplasticizer and some other additives. Microsilica gel can be added to concrete components both in batching and in track mixer. To achieve better results, first stir the contents of the container until the product become uniform and then add it to the mixture in several steps.

Dosage

The amount of consumption varies from 5% to 8% of the weight of cement. It depends on the desired strength, service of life and durability of the concrete. (5 to 8 kg for 100 kg of cement)

PRODUCT INFORMATION

Storage conditions: In a dry and covered place

Storage period: 12 months in original packaging

Packing: 20 kg packaging

Color: Gray

Physical condition: Gel liquid

Special Weight: 1/45 gr/cm³

PH: About 10

Chlorine ions: does not have



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