

Description:

Microsillex is a manufactured pozzolan based on quality controlled natural silica, designed to improve the performance and durability of the concrete. Its high pozzolanic activity index gives it a high reactivity in mortar and concrete mixes.

Uses and applications:

Microsillex is a densifier additive that improves the cement pastes, mortar and concrete.

Microsillex can be used in projects where high concrete durability is required, such as:

- Pavements
- Waterways
- Bridges
- Waste water tanks
- Any other concrete exposed to sulfate attack.

Microsillex is also used in oil well casings.

Physicochemical properties:

Chemical properties (%)	ASTM C-618	Microsillex
$\text{SiO}_2 + \text{Al}_2\text{O}_3 + \text{Fe}_2\text{O}_3$	70.0 Minimum	>90
SO_3	4.0 Maximum	<1
Humidity	3.0 Maximum	<2
Loss on ignition	10.0 Maximum	<2

Physical Properties	ASTM	Microsillex
Fineness in 325 sieve (45 μm) (% passing)	ASTM C-430 76.0 Minimum	>95
Sulfate resistance at 360 days (%)	ASTM C-1012 0.05 maximum (high resistance) 0.10 maximum (moderate resistance)	<0.04 15% subs
Alkali-aggregate reaction at 8 weeks (%)	ASTM C-227 0.06 Maximum	<0.02
Density (g/cm^3)	ASTM C-604 Does not apply	2.3
Pozzolanic activity index at 7 days (% of control)	ASTM C-311 75 minimum	>90
Pozzolanic activity index at 28 days (% of control)	ASTM C-311 75 minimum	>115
Required water (% of control)	ASTM C-618 115 maximum	105-110
Chloride ion penetration resistance (Coulombs) at 6 months	ASTM C-1202	<1200 15% subs

Advantages:

In concrete mixes, Microsillex increases compressive strength at 28 days, improves the workability, reduces permeability, increases the resistance to sulfate attack, mitigates the alkali-aggregate reaction and increases the concrete abrasion resistance.

Unlike other silicas, Microsillex is clear colored therefore it does not darken the concretes.

Recommendations for use:

Microsillex can be used in addition or substitution based on the cement weight.

A 5% to 20% dosage is recommended based on the cement weight; if the aggregates contain reactive silica, a minimum dosage of 15% is advised.

The optimal amount of Microsillex must be determined through laboratory testing.

For better results, the use of water reducing additives in the concrete or mortar mix is advised.

Recommendations for transport:

- Remove from platforms nails or materials that may damage the bags.
- Use belts or bands to secure the bags; if ropes are used, place protectors in the friction surfaces.
- When using a service lift observe that the blades do not harm the pallets nor the bags.
- To lift or move a bag, it must be taken from below with both arms.
- Use platforms or long wide wheelbarrows to prevent the bags from protruding.

Recommendations for storage:

- Cover the bags, store them in dry places and avoid long storage periods (more than 3 months.)
- Place the bags preferably on pallets or clean, flat surfaces.
- Avoid nails, bumps or broken pallets or platforms.
- Use the bags that have been in storage the longest.
- Arrange in piles, leave a 5cm space in between each pile.

Available in:

- 25 and 50 lb. bag.
- Bulk.

Precautions:

Microsillex contains materials that can cause throat, eyes and skin irritation. Avoid direct contact. The use of the appropriate glasses, gloves and mask is advised. Wash the exposed parts of the skin with water. If any dust gets into the eyes, flush immediately and repeatedly with water for 10 minutes and get prompt medical attention.

The specifications and properties of this product are not limited. If you require any special characteristics please contact GCC Technical Assistance to get further guidance.