

# Castech RAW SILICA FUME

## Technical Data Sheet

### Description

**Castech Raw Silica Fume** also called raw microsilica, is derived from the production process of smelting ferrosilicon and industrial silicon, through to remove silicon oxide flue steam, collected the amorphous Silica powder by the dust collector which has special design. The average particle size of silica powder is 0.1-0.15  $\mu$  m. The specific surface area is 15-27m<sup>2</sup>/g, with strong surface activity.

### Advantages

- ❖ High activity
- ❖ Strong microaggregate effect
- ❖ Small particles, large specific surface area, easy to disperse
- ❖ The color is light and has no effect on the color of concrete
- ❖ Good compatibility with admixture
- ❖ Improve the compactness of concrete and the impermeability
- ❖ The overall strength of concrete was increased significantly, especially in the later stage

### Application

Applicable to commercial concrete, high strength concrete, self-leveling concrete, monolithic refractories, dry mixing (ready-mixed mortar, high strength

non-shrinkage grouting materials, industrial

floor wear-resisting, repair mortar, polymer mortar, insulation mortar, concrete permeability, it can also be used as a concrete solid agent, preservative, for water cement polymerization technology.

### Packing

**Castech Raw Silica Fume** is available in 25 kg plastic bags, can also be negotiated packaging.

### Physical Properties\*

PROPERTY	TYPICAL RESULTS
<b>Appearance</b>	Pale grey powder
<b>Density</b>	200-800kg/m <sup>3</sup>
<b>SiO<sub>2</sub> content</b>	≥85.90%
*The above properties are average laboratory values	

### Dosage

The product's dosage is 5-30% of cement dosage commonly.



### Shelf Life

12 months when stored in factory packed unopened bag, stored in a cool dry and elevated place away from direct sunlight.

### Effect on the performance of concrete

When silica powder is added into cement concrete, it can be well filled in cement particle gap, making the slurry more compact. In addition, it is also combined with free calcium hydroxide to form stable calcium silicate hydrate, whose gel strength is higher than that of calcium hydroxide crystal, mainly as follows:

- (1) Increase the intensity: It can greatly increase the compressive and flexural strength of concrete. When mixed with 5-10% silica powder, the compressive strength can be increased by 10-30%, and the flexural strength can be increased by more than 10%.
- (2) Increase the density: It can increase the impermeability of concrete by 5-18 times, and increase the anti-seepage ability by more than 4 times.
- (3) The frost resistance: micro silicon powder in a 300-500 times fast thawing cycle, relatively low elastic modulus long

10-20%, and normal concrete, through 25-50 times cycle relatively long low elastic modulus is 30-73%.

(4) Early strength: silica fume concrete can shorten the induction period and has the characteristics of early strength.

(5) Anti-impact grinding and anti-cavitation property: the anti-impact abrasion ability of silica fume concrete is increased by 0.5 to 2.5 times than that of ordinary concrete, and the anti-cavitation ability is increased by 3-16 times.

### Technical Support

**CasTech** offers full technical support package to specifiers, contractors and end users, as well as technical assistance on site and after sales consultations.

### Health & Safety

As with all chemical products, caution should always be exercised. Protective clothing, such as gloves and goggles, should be worn. See packaging/MSDS for specific instructions.

Treat any splashes to the skin or eyes with fresh water immediately. Should any of the products be accidentally swallowed, do not induce vomiting, but call for medical assistance immediately.

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