

Silica fume for concrete

AREA OF USE

Cementol Microsilika is a powdery mineral admixture, compacted amorphous microsilica, that is due to its large specific surface and latent cement properties used to produce high-quality mortars and concretes:

- With high strengths,
- With increased water impermeability,
- With increased abrasion resistance,
- With increased resistance to chemical aggression,
- With greatly reduced water absorbency.

TECHNICAL CHARACTERISTICS

Characteristic	Declared value
Appearance	Grey powder
SiO ₂ content	≥ 85 %
Water-soluble chloride content [Cl ⁻]	≤ 0.3 %
Activity Index	100 %

COMPLIANCE

Cementol Microsilika – silica fume for concrete, complies with the requirements of the EN 13263-1 standard.

ACTION

Amorphous microsilica is made up of micron-sized spherical particles that can fill empty spaces in the cement paste between irregularly shaped cement particles, making the cement paste significantly denser, which improves many concrete properties (water penetration, resistance to abrasion and chemical attack, porosity).

Due to its properties, silica fume reacts with free lime in cement to form calcium silicate hydrates, which aids in the increase of later strengths.

DOSAGE AND INSTRUCTIONS FOR USE

The recommended dose is 5 – 10 % of cement weight (5 – 10 kg per 100 kg of cement) depending on the desired effects and working conditions.

It is dosed into a dry aggregate and cement mixture and thoroughly mixed for at least 30 seconds before adding water. The mixing water is then added, and the mixture is mixed for another 90 seconds.

According to the experience of some concrete mixing plants, increasing the mixing time to 180 seconds is required to achieve homogeneity and consistent concrete quality.

Because of the large specific surface area of Cementol Microsilika, the need for water is greatly increased, resulting in concretes with a high water-cement ratio. To avoid this, we always use Cementol Microsilika in conjunction with a superplasticizer/hyperplasticizer from the Cementol Zeta or Cementol Hiperplast family.

Cementol Microsilika is compatible with many admixtures, such as: plasticizers from the Cementol Delta family, superplasticizers from the Cementol Zeta family, hyperplasticizers from the Cementol Hiperplast family, air-entraining admixtures from the Cementol Eta family.

Before using a higher number of admixtures in a concrete mix, we advise prior examinations. In this case, they must be added to the concrete mixture separately (one after the other).

When designing a concrete mix, we respect the requirements and principles of the EN 206 standard: Concrete – specification, performance, production and conformity, as well as the relevant national provisions. We strictly adhere to the recommendations for the limit values of the composition and properties of the concrete, taking into account the exposure levels, when designing concretes with increased corrosion resistance.

During concreting and curing of fresh concrete we respect the principles of good practice. Wet curing is required for at least 3 to 7 days if concreting at higher temperatures and/or low humidity [spraying with water, covering with felt and foil, etc.]. We follow the protective measures for working at low temperatures when concreting at low temperatures.

PACKAGING

paper bags 20 kg, big-bag 1100 kg, in bulk

STORAGE

- Store the product in a dry and well-ventilated place. Keep it away from potential damage, water and moisture.
- A properly stored product has a shelf life of min. 2 years after the production date.
- The product may still be used after the date of expiry, but the characteristics important for the intended use have to be examined.

HEALTH, SAFETY AND ECOLOGY

No special measures are required when working with Cementol Microsilika. Follow the general instructions for working with chemicals: take care of cleanliness, do not eat, drink or smoke while working. After finishing work, wash hands thoroughly with water.

More information on safe handling and disposal of the product is available in the safety data sheet, which is provided on request, and is also available from the dealer or distributor where you purchased the product.

WARNING

Instructions and recommendations are given based on examinations in our laboratories and experience to date. Due to specific conditions and work methods, preliminary tests are advised for every type of use, for each individual case of use of the product alone, or in combination with other admixtures.

Since we cannot influence the course of work, we cannot be held responsible for its quality!



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