



PENTASIL MCF

Micro-silicates

Technical Data Sheet, September 2015

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| DESCRIPTION | Pentasil MCF is composed of micro-silicates with high pozzolan activity, treated to increase their capacity of dispersion both in the powder and liquid phase. |
| FEATURES | <p>Pentasil MCF is composed of 93 – 96% of spherical particles of amorphous SiO_2 with some tenths of micron as maximum size, thus its specific surface is about $150.000 \text{ cm}^2/\text{g}$ (Blaine). This characteristic gives it high capacity of collecting and fixing calcium hydrate $[\text{Ca}(\text{OH})_2]$ and of changing it, first into a hydrate silicate and then into stable and insoluble calcium silicate.</p> <p>This peculiarity allows modifying the behaviour of cement mixtures both in the wet and in the hardened state.</p> <p>It is necessary to say that, to obtain good workability, all the mixtures containing cement always require more water than the water needed for the hydration of cement. That brings about the formation of capillaries and hollows in the hardened cement paste and the more water will be added, the more capillaries. The free lime that forms during the hydration of cement and is not fixed as a silicate remains in the capillaries in the latent state. As a consequence, the hardened conglomerate is vulnerable to external agents, and that reduces its stability and durability.</p> <p>Pentasil MCF, added to cement mixtures in a ratio of 2 – 8% of the weight of the cement, collects the free lime and reacts with it, so stabilizing it in the form of insoluble silicate and filling the hollows in the cement paste.</p> <p>Therefore, the hardened conglomerate turns out to be more compact, impermeable, resistant and durable in time.</p> |
| USE | <p>Pentasil MCF is used in the preparation of protective slurries, injectable slurries for consolidation works, expansive slurries, high-strength mortars, thixotropic mortars for repair works, anti-shrinkage mortars both premixed and wet.</p> <p>Besides, it is used for reducing the bleeding in concretes, pumpable concretes and highly resistant and durable concretes.</p> |
| DOSAGE | The dosage of Pentasil MCF normally ranges between 1 and 10% of the weight of the cement, depending on the type of mixture and the expected features. However, different dosages can be used, after carrying out preliminary tests. |

TECHNICAL DATA

| | Data | Method |
|--------------------------|----------------------------------|------------|
| State: | Powder | Visual |
| Colour: | Grey – dark grey | Visual |
| Bulk Density: | 0,750 ± 0,100 kg/dm ³ | IST. 10.07 |
| Granulometry: | Min. 98%<0,180 mm | IST. 10.09 |
| Humidity : | Max 4 % | IST. 10.04 |
| Water solubility: | insoluble | IST. 10.21 |

STORAGE AND VALIDITY

Pentasil MCF has 12-month validity beginning with delivery, if it is stored in a dry place and in the original bags kept perfectly closed.

Should moisture be absorbed by the product, this does not affect its efficaciousness, but it makes its dosage difficult and the distribution in the finished mixture not homogeneous.

It is therefore advisable to close bags carefully after each collection.

PRECAUTIONS

Pentasil MCF is harmless in contact with skin.

It is easily removable from any surface with water and soap

Inhalation can cause a slight irritation of the first part of the respiratory tract; it is therefore advisable to use a dust mask.

In case of accidental loss it must be picked up in the dry state and discharged in an authorised waste dump.

PACKAGING

25-kilo paper bags

The specifications stated in this report have been got either through standardized tests and rules or their modifications following Pentachem systems. The methods applied can be requested to our technical service.

All the data stated in this technical sheet are based on our knowledge and experience. However, before using the item differently from indicated, it is advisable to carry out preventive tests. In any case, PENTACHEM does not assume any responsibility for any damage or defect caused by the use of our products, as the employment conditions are not under our control. We also inform that our technical service is at our customers' disposal for any information concerning the correct employment of our products.

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