# E. M. MICROSILICA

## AMORPHOUS (NON-CRYSTALLINE) SILICON DIOXIDE ($SIO_2$)

E. M. MICROSILICA is a very fine, gray powder with highly active pozzolanic properties. E. M. MICROSILICA can be used in addition of cement or as replacement of a part of cement content. It has to be mentioned that E. M. MICROSILICA is composed of amorphous silica produced by electric arc furnaces as a byproduct of the production of elemental silicon or ferrosilicon alloys.
It meets the requirements of the following standard:
ASTM C 1240, ISIRI 13278

## FIELD OF APPLICATION

- Concrete in marine environments
- Precast concrete
- High Performance Concrete (HPC)
- High strength concrete (HSC)
- Sulfate Resistant Concrete
- Chloride resistant concrete
- Where Alkali Silica Reaction is expected
- Sewage works and drinking storage systems
- Concreting piles & bridge decks

## ADVANTAGES

- Increasing mechanical properties of concrete
- High performance properties such as high strength & durability in concrete
- Workability improvement of concrete, grout and mortar
- Lowering the hydration reaction and prevention from cracking
- Excellent improvement in consolidation of concrete
- Lowering the pH of cementitious mixtures
- Preventing Alkali Silica Reaction in concrete and mortars
- Excellent improvement in concrete permeability
- Excellent improvement in electrical resistivity of concrete

## DOSAGE

Depending on concrete mix design (sizes and types of aggregates, cement content, water/cement ratio, ambient temperature and concreting conditions), a dosage of between 7 and 12 percent by weight of cement or cementitious material is recommended. For use with other range of dosage, contact ABADGARAN Technical Services Department.

NOTE: Due to water absorption of E. M. MICROSILICA, it should be used with plasticizer admixtures. Otherwise it causes cracks and reduces the efficiency of the concrete.

## DIRECTION OF USE

E. M. MICROSILICA can be added to the concrete by one of the following procedures:
1- It can be mixed with other dry components of the mixture, especially cement, before addition to the mixer.
2- It can be mixed with sufficient water, and be added to the mixer in slurry form. In this case the water content of slurry should be considered as a part of mixing water.



No. 65 & No. 124, Unit 1, West Shahid Ghandi St., North Sohrevardi Ave., Tehran-Iran
Tel-Fax: +98 (21) 877 54 - 5 & +98 (21) 885 143 24 - 5
www.abadgarangroup.com info@abadgarangroup.com

**Revision Date: 06/09/2018**

## PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Powder
Color: Gray

## STORAGE

Shelf life: Unlimited, in the original package
Storage condition: should be protected from direct sunlight and moisture. Keep bag in temperature range of +10°C to +30°C.
Packing: 300-450 kg big bags

## HEALTH AND SAFETY

Silica fume has not been classified for hazardous physicochemical properties under the Globally Harmonized System (GHS).
No classification for health and environment hazards. The dust from silica fume may cause non-specific mechanical irritation to the eyes and respiratory tract. Use an approved NIOSH dust respirator with a minimum N95 rating. It should not be swallowed and contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water. E. M. MICROSILICA is not flammable.
For further information refer to the material safety data sheet. MSDS is available at ABADGARAN website.

## TECHNICAL SERVICE

The ABADGARAN INTERNATIONAL GROUP Technical Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.



No. 65 & No. 124, Unit 1, West Shahid Ghandi St., North Sohrevardi Ave., Tehran-Iran
Tel-Fax: +98 (21) 877 54 - 5 & +98 (21) 885 143 24 - 5
www.abadgarangroup.com info@abadgarangroup.com

**Revision Date: 06/09/2018**