

CEMTEC DMS

POWDERED, DENSIFIED MICROSILICA CONCRETE ADMIXTURE

CEMTEC DMS is a ready-to-use powdered microsilica concrete admixture. This product reacts chemically with the calcium hydroxide in the Cement past which yields a calcium silicate hydrate gel that significantly enhances strength and durability. The super fine micro silica fills the voids between cement particles creating a very dense, less permeable concrete.

WHERE USED

CEMTEC DMS is recommended for use where high strength, or high density concrete is needed. Higher strength allows for new structural designs, reducing the concrete section, production, transportation and erection costs. Because of the reduced permeability of the surfaces, concrete using **CEMTEC DMS** is suited for use on bridge decks and parking structures in marine environments and anywhere where corrosion of embedded steel due to salt or water ingress is a potential problem.

FEATURES/BENEFITS:

- High ultimate compressive and flexural strength for greater structural capacity.
- High early strength gain for faster turn around time.
- Low permeability for greater resistance to water and salt penetration.
- Increased abrasion and chemical resistance for a longer life expectancy.
- Greatly improved freeze/thaw and scaling resistance.

ENGINEERING DATA

Specific gravity	: 2.2
Bulk Density	: approx. 480 kg/m ³
Microsilica content	: 100%
Amorphous SiO ₂	: 92 - 98%
Appearance	: gray powder

PACKAGING

CEMTEC DMS is packaged in 600 kg bags. A typical Mix sequence would be:

- **CEMTECDMS**
- 75% rock, plus sand and 75% water
- Air entraining and water reducing admixtures (if used)
- Cement
- CEMTEC 400 high range water reducer
- Rock 25% and 25% water.

DOSAGE

Use **CEMTEC DMS** at 7- 10% by weight of cement. Contact Construction Material Chemical Industries for guidance where higher dosages of up to 15% by weight of cement are needed.

FINISHING AND CURING

Some general notes on finishing and curing of concrete containing **CEMTEC DMS**

- Concrete containing **CEMTEC DMS** will bleed much less than conventional concrete; at higher dosage rates bleeding will be essentially eliminated. Due to this lack of bleed water, concrete containing **CEMTEC DMS** will be more susceptible to plastic shrinkage cracks and surface during than ordinary concrete.
- Plastic shrinkage cracks occur due to rapid moisture loss from the surface of the concrete. Because concrete containing **CEMTEC DMS** will have a reduced amount of bleed water to replenish that which has evaporated, it will be more susceptible to plastic shrinkage cracking.
- Plastic shrinkage cracking is most likely to occur when low humidity, wind, high air temperature and high concrete temperature are present in any combination. When these conditions do exist, the use of an evaporation retardant such as Cemtec-Bar should be used. Note that plastic shrinkage cracking on concrete containing **CEMTEC DMS** will occur at lower evaporation rates than for normal concrete.
- Methods other than **CEMTEC RETARDENT** can be employed to help reduce the possible occurrence of shrinkage cracking. These include erecting windbreakers, fog spray between finishing operations, covering concrete with wet burlap and reducing concrete temperature with ice or cooled aggregates. Placing concrete later in the day to avoid direct sunlight and high temperatures is also good practice.

“High Quality Construction Chemicals”

- If plastic shrinkage cracks do occur, prompt reworking of the fresh concrete can effectively close them, preferably using magnesium or steel tools. To prevent recurrence of the shrinkage cracks, the concrete should be promptly and thoroughly covered or kept moist.
- If a high dosage of **CEMTEC DMS** is used in the concrete mix and conditions are favorable for plastic shrinkage cracking, the concrete may become very difficult to finish. In situation such as this, it is recommended to use a one pass finishing procedure of screeding, bullfloating, and broom finishing or texturing of the surface, followed immediately by curing procedures.
- Proper curing of concrete containing **CEMTEC DMS** is absolutely critical in order to achieve the designed high strength and high durability. Proper curing requires the maintenance of proper moisture and proper temperature conditions in the concrete.
- All curing of concrete containing **CEMTEC DMS** should begin immediately after the finishing procedure is completed. Acceptable curing methods are wet burlap, polyethylene and the use of a high solids liquid membrane forming curing compound such as CEMTEC KUREN SEAL

GENERAL GUIDELINES

- Water demand will be increased. Most mixes will require the use of a high range water reducer such as **CEMTEC DMS** for workability and suitable water contents.
- Test batches/mix designs will be needed for each plant due to variations in cements and aggregates.

QUALITY STATEMENT

CMCI manufacture its products at their manufacturing facility in Saudi Arabia as per the Quality Procedures certified to conform with Quality Management System described in ISO 9000 series

CMCI provides a comprehensive technical support system for its full range of high performance construction products. CMCI also offers full technical field support to consultants, Architects, Contractors, applicators and End Users

The Technical Specification information and recommendation given are based on the current technical knowledge and the user or his representative is recommended to check the suitability of the product. CMCI reserves the right to amend the technical characteristic of the product as part of ongoing research and development. As the work execution is beyond the direct and continuous control of CMCI no guaranty and or responsibility is assumed on the performance of work completion executed with use of our products.