

# CEMCRETE PC5581

**SUPERPLASTICIZER FOR HIGH PERFORMANCE CONCRETE**



## DESCRIPTION

**CEMCRETE PC5581** is a ready to use polycarboxylate based high range water-reducing admixture for concrete. **CEMCRETE PC5581** can be used to produce concrete increased workability or to significantly reduce water demand for a specific slump.

## FEATURES & ADVANTAGES

- Ready Mix Concrete for high strength and high performance
- Site Mixed Concrete
- Suitable for crushed sand concrete
- Pumped concrete

### Primary uses to obtain.

- Good dispersion resulting in High workability & good slump retention.
- Improves cohesiveness & pumpability.
- Increases early & ultimate strengths.
- Increases Flexural strength
- Can be placed and compacted in congested reinforcements without vibration & improves surface finish.
- Increases durability & impermeability.
- Ideal for use in low fines, crushed sand concrete mixes.

## STANDARDS

ASTM C 494 – Type F

## TECHNICAL PROPERTIES

Appearance	Light Brown Liquid
Base material	Modified Poly-carboxylic Ether
Specific Gravity @25°C	1.080 ± 0.020
Chloride content	Maximum 0.2%
pH	Minimum 4

## METHOD OF APPLICATION

Add 80-90% water to the concrete based on Mix Design by weight. The correct quantity of **CEMCRETE PC5581** should be measured with recommended dispenser and should be added to the concrete with remaining mixing water. Allow to mix it for recommended mixing time. The addition of **CEMCRETE PC5581** to dry mixes or cement is not recommended

Thorough mixing is essential and after addition of **CEMCRETE PC5581**, minimum mixing cycle of 60 seconds for forced action mixers is recommended.

## DOSAGE

As a starting point, a dosage range of 0.5 liter to 1.2 liter per 100kg of cementitious materials is recommended. Optimum dosage of **CEMCRETE PC5581** should be determined in trial mixes. Please consult CMCI's Technical service for further information.

## COMPATIBILITY

**CEMCRETE PC5581** is compatible with all types of cements and **CEMCRETE R** series of products. If more than one admixture is to be used in concrete, they must be dispensed separately with prior consultation with CMCI's Technical Services.

**CEMCRETE PC5581** is suitable for mixes containing:

- Micro-silica
- Pulverized Fly Ash
- Ground Granulated Blast Furnace Slag

## WORKABILITY

**CEMCRETE PC5581** ensures that concrete remains workable for about an hour 1 hours at 20°C. Workability loss is dependent on temperature, type of cement, nature of aggregates, the method of transport and initial workability.

It is strongly recommended that concrete should be properly cured particularly in hot and dry climates

## MECHANISM OF ACTION

Conventional Super-plasticiser, based on Sulphonated Naphthalene or Melamine Formaldehyde condensates, at the time of mixing getting absorbed onto the surface of cement particles. This absorption takes place at very early stage in the hydration process. The sulphonic groups of the polymer chains increases the negative charges on the surface of the cement particle and the dispersion of the cement occurs by Electrostatic Repulsion.

**CEMCRETE PC5581** is differentiated from conventional super-plasticizers in that it is based on unique carboxylic ether polymer with long lateral chains. This greatly improves the cement dispersion. At the start of the mixing process the same electrostatic dispersion takes place as described above; but the presence of the lateral chains, linked to the polymer backbone, generate a Steric Hindrance which stabilizes the cement particles capacity to separate & disperse. This mechanism provides highly workable concrete with greatly reduced water demand.

## PACKAGING

Available in 210 Liters drum and in 1000 Liters IBC tank.



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**CONSTRUCTION  
CHEMICALS**

## SHELF LIFE

The shelf life of the product is 1 year when stored as recommended.

## STORAGE

**CEMCRETE PC5581** must be stored at above 5°C temperature. Store under cover, protect it from direct sunlight. Failure to comply with recommended storage condition may result in premature deterioration of the product or packaging

## EFFECTS OF OVER-DOSAGE

A severe over-dosage of **CEMCRETE PC5581** will result in the following:

- Retardation of Setting Time
- Increase in workability / segregation.
- Slight increase in air entrainment

## HEALTH AND SAFETY

- **CEMCRETE PC5581** is non-toxic and inflammable. When in contact with the skin, it should be washed with cold water.

TD/PDS/0521/A

### Quality Statement

CMCI manufactures 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 recommendations 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.

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