

# CEMTEC-31R

## WATER REDUCING PLASTICIZING AND SET RETARDING ADMIXTURE FOR CONCRETE (ASTM C-494 TYPE B AND D)



### DESCRIPTION

**CEMTEC-31/R** admixture is a ready-to use aqueous solution of modified lignin sulphonic acid and organic salts.

It contains no chlorides and its specific gravity is 1.2 **CEMTEC-31/R** is designed to produce the higher compressive, flexural and tensile strength of concrete by means of water reducing and through control of the cement hydration

### FEATURES & ADVANTAGES:

The use of **CEMTEC-31/R** produces fresh concrete with greater plasticity and workability, easier to place and more finishable than plain concrete or concrete treated with another admixture. **CEMTEC-31/R** is also designed to delay and control the setting time of concrete. These features will give the following advantages:

#### At the same workability:

- At the usual addition rate the initial setting time of concrete will be extended by 2 to 4 hours at 20°C.
- Water reduction provides strength increases at all ages.
- Economy of mixing due to improvement in strength.
- Improved impermeability and reduced shrinkage in the hardened concrete.

#### At the same water / Cement Ratio:

- Better control of hydration provides strength increases 10% to 20% at all ages especially in the hot weather concreting.
- Improved concrete flow over an untreated mix
- Better vibration response and finish.

### BASIC USES

**CEMTEC-31/R** plasticizer is used wherever a delay in setting time will ensure sufficient time for delivery, placement, vibration or compaction, particularly for:

- **HOT WEATHER CONCRETING** where delayed set will ensure sufficient placement time and improve concrete quality.
- **TRANSIT MIX CONCRETE** where setting time on long hauls must be extended.

### CHEMICAL ACTION:

**CEMTEC-31/R** acts to optimize the rate and degree of hydration of the Portland cement in the concrete. **CEMTEC-31/R** also acts as a dispersing agent and lessens the natural interparticle attraction between cement grains in water. The combination of water reduction and controlled hydration optimizes the rate of formation of gel, the paste that “glues” or binds together the individual portions of the concrete aggregate. This controlled rate of gel formation adds to the water retention and internal cohesiveness of the mix, reducing bleeding and segregation while increasing the workability, placeability and finishability of the concrete. **CEMTEC 31/R** while not reducing the total heat hydration development during the reaction of the cement and water, does have a marked effect on the rate of heat evolution spreading it out over a longer time and reducing harmful shrinkage often found in hot weather concreting.

### ADDITION RATE:

Excellent results are obtained using an addition rate of 0.4 liters -1.2 liters per 100 kgs of cement depending on job conditions and delay required. Higher dosage is needed where more water reduction is required.

### DISPENSING EQUIPMENT

A complete line of accurate automatic dispensing equipment is available. **CEMTEC-31/R** must be introduced to the mix with the water.

### COMPATIBILITY WITH OTHER ADMIXTURES

**CEMTEC-31/R** is compatible in concrete with Cemtec Air Entraining Admixture. EACH ADMIXTURE SHOULD BE ADDED SEPARATELY TO THE MIXER.

### TECHNICAL INFORMATION

**Typical Engineering Data :** The following results were developed under laboratory conditions.

#### Mix Design

Cement content ( opc )	- 307 kg/m <sup>3</sup>
Coarser aggregate	- 64 %
Finer aggregate	- 36%

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Data Sheet



#### PACKAGING

**CEMTEC-31/R** is available in 10,000 ltr. bulk tanks, 1000 ltrs containers or 210 ltr. drums.

**COMPRESSIVE STRENGTH:**

Age	Specification Control ( % of Control)		Cemtec -31/R mix (% of control)
3days	min 110	100	130
7days	min 110	100	136
28days	min 110	100	138

**ENGINEER'S SPECIFICATION:**

Concrete shall be designed in accordance with ACI Standard Recommended Practice for Selecting Proportions for Concrete (ACI 211.1-74). the waterreducing plasticizing admixture shall comply with ASTM designation C-494 Type B and D admixture and shall be **CEMTEC-31/R** as manufactured by Construction Material Chemical Industries or one proved to be equivalent. It shall be used in Strict accordance with the manufacturer's recommendations.

**OVERDOSING EFFECTS:**

An overdosing of **CEMTIC 31R** will result in significant retardation of the initial set. However the ultimate strength will not be affected on condition that proper curing methods are observed.

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**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 erformance 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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