

# CEMCRETE R33

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



### DESCRIPTION

**CEMCRETE R33** admixture is a ready-to-use aqueous solution of hydroxylated organic compounds. Ingredients are factory premixed in exact proportions to minimize handling, eliminating mistakes and guesswork. **CEMCRETE R33** contains no chlorides.

### FEATURES & ADVANTAGES

**CEMCRETE R33** is designed to produce a higher compressive flexural and tensile strength in concretes, through water reduction (typically 8 to 10%) and through hydration control of the tricalcium silicate (C3S) phase of the Portland cement. This water reducing action of **CEMCRETE R33** produces greater plasticity and workability in the fresh concrete, as well as improved impermeability and reduced shrinkage in the hardened concrete.

**CEMCRETE R33** is used wherever a delay in setting may be required to ensure sufficient time for delivery, placement, vibration, or compaction. This may be particularly important for:

- **HOT WEATHER CONCRETING** where delayed set will ensure sufficient placement time and improve concrete quality.
- **TRANSIT MIX CONCRETE** to extend setting time on long hauls.
- **BRIDGE DECKS** and large slabs where **CEMCRETE R33** extends plastic characteristics of the concrete until progressive deflection resulting from increased loads is complete. This may eliminate the necessity for cold joints.

### DOSAGE

Addition rates for **CEMCRETE R33** range from 0.4 liters to 1.2 liters per 100kgs of cement. The amount to be used will depend upon degree of retardation required and temperatures under job conditions.

Longer setting time or higher temperature will require higher addition rates. Conversely, the addition rate will be lower for shorter retardation. Trial mixes are recommended to determine optimum addition rates of **CEMCRETE R33** with available concrete materials and job conditions.

### SPECIAL APPLICATIONS

**CEMCRETE R33** is also used in applications such as:

#### STRUCTURAL AND PRECAST CONCRETE.

Rapid strength development after delayed initial set permits earlier removal of formwork.

With **CEMCRETE R33** usage 28-days concrete compressive strength of non-admixture concrete can be obtained within 14 days or even 7 days without changing the mix design. Similarly, 7 days concrete compressive strength of plain concrete is reached within 3 days by adding **CEMCRETE R33** to the mix.

### PRESTRESSED CONCRETE

Where 28-days compressive strengths in excess of 46.5 N/mm<sup>2</sup> (6500 Psi) are usually required and also where added time is necessary to properly vibrate and compact long beds and large cross sections. Note that **CEMCRETE R33** while not reducing the total heat of hydration developed during the reaction of cement and water, does have a marked effect on the rate of heat evolution. Figure 2 illustrates the typical influence of **CEMCRETE R33** on the rate of heat of hydration development and dissipation.

### CEMCRETE R33 EFFECT OF DEVELOPMENT OF HYDRATION

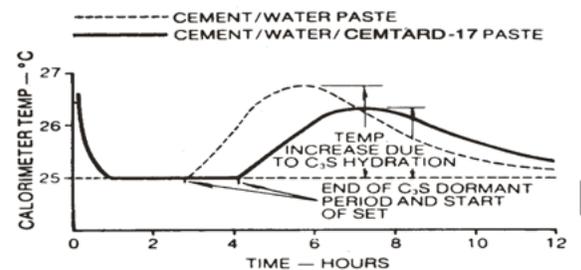


FIGURE 2

### COMPATIBILITY WITH OTHER ADMIXTURES

**CEMCRETE R33** is compatible in concrete with all commercial air-entraining admixtures. EACH ADMIXTURE SHOULD BE ADDED SEPARATELY.

### DISPENSING EQUIPMENT

A complete line of accurate, automatic dispensing equipment is available to suit all types of concrete batching plants **CEMCRETE R33** may be introduced to the mix with the water.

### PROPERTIES

Appearance	Dark Brown (Liquid)
Specific Gravity at 25°C	1.15 ±0.02
Chloride Content	NIL- BS 5075



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**CONSTRUCTION  
CHEMICALS**

## ENGINEER'S SPECIFICATION

Concrete shall be designed in accordance with ACI Standard Recommended Practice for Selecting Proportions for Concrete (ACI 211.1-74). The water reducing plasticizing admixture shall comply with ASTM designation C-494 Type B and D admixture and shall be **CEMCRETE R33** 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.

The addition rate shall be adjusted to produce the specified retardation of the concrete mix at temperature prevailing at the site.

## STORAGE

**CEMCRETE R33** has a shelf life of 12 months from manufacturing date and keep at temperature between 5°C and 45°C.

## Health and Safety

- It is safe for use with standard precautions wear suitable protective clothing, safety goggles and gloves.
- If swallowed, do not induce vomiting, and seek medical attention.
- In case of accidental eye contact wash copious quantities of water and seek medical attention.
- Should skin contact occur, rinse the exposed skin with plenty of water, if irritation persist, seek medical attention.

TSS/11022021-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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