

# CEMTARD 17

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

### DESCRIPTION:

**CEMTARD 17** 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. It contains no chlorides and its specific gravity is 1.22.

### USES AND ADVANTAGES:

**CEMTARD 17** is designed to produce the highest compressive flexural and tensile strength in concretes, through water reduction (typically 8 to 10%) and through hydration control of the tricalcium silicate ( $C_3S$ ) phase of the Portland cement. This water reducing action of **CEMTARD 17** produces greater plasticity and workability in the fresh concrete, as well as improved impermeability and reduced shrinkage in the hardened concrete.

**CEMTARD 17** 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 **CEMTARD 17** extends plastic characteristics of the concrete until progressive deflection resulting from increased load is complete. This may eliminate the necessity for cold joints.

### ADDITION RATES:

Addition rates for **CEMTARD 17** range from 0.17ltr. to 0.35Ltr./100kgs of cement.

The amount to be used will depend upon degree of retardation required and temperatures under job conditions.

For normal use, 0.2 ltr/100 kgs. of cement will prove adequate.

Longer setting time or higher temperature will require higher addition rates.

Conversely, the addition rate will be lower for shorter retardation.

Trail mixes are recommended to determine optimum addition rates of **CEMTARD 17** with available concrete materials and job conditions.

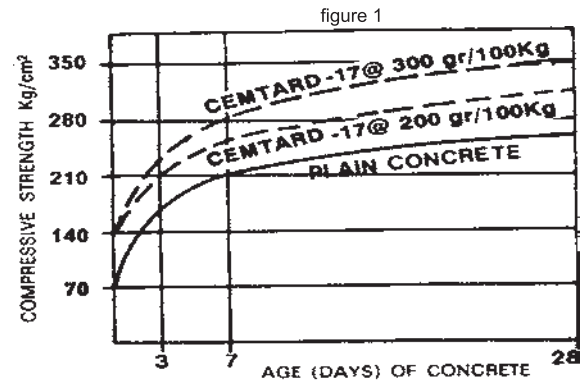
### SPECIAL APPLICATIONS

**CEMTARD 17** is also used in applications such as:

#### **STRUCTURAL AND PRECAST CONCRETE.**

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

With **CEMTARD 17** 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 are reached within 3 days by adding **CEMTARD 17** to the mix (see figure 1)



### **CEMTARD 17 THE EFFECT OF INCREASED ADDITION RATES ON STRENGTH: FIGURE 1**

#### **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 **CEMTARD 17** 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 **CEMTARD 17** on the rate of heat of hydration development and dissipation.

reducing set-retarding admixture shall comply with ASTM Designation C-494 Type B and D admixture and shall be **CEMTARD 17** as manufactured by CMCI 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.

### **COMPATIBILITY WITH OTHER ADMIXTURES**

**CEMTARD 17** is compatible in concrete with all commercial air-entraining admixture such as CEMTECAIR ENTRAINING ADMIXTURE. 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

**CEMTARD 17** may be introduced to the mix with the water.

### **PACKAGING**

**CEMTARD 17** is available in 1000 ltr. containers 10,000 ltr. tanks and in 210 ltr. drums. It contains no flammable ingredients

### **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%

### **COMPRESSIVE STRENGTH**

Age	Specification (% of Control)	Control	CEMTARD 17 mix (% of control)
3 days	min 110	100	121
7 days	min 110	100	117
28 days	min 110	100	117

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.