

CEMTEC WRA

WATER REDUCING AND PLASTICIZING ADMIXTURE FOR CONCRETE (ASTM C-494 TYPE A)

DESCRIPTION:

CEMTEC WRA admixture is a ready-to-use aqueous solution of highly purified lignosulfonates and a catalyst which promotes a more rapid and complete hydration of cement. It does not contain chlorides. Ingredients are factory premixed in exact proportions to minimize handling and eliminate mistakes and guesswork. Its specific gravity is 1.14.

USES:

CEMTEC WRA makes a workable mix with up to 15% less water. And gives a stronger, less permeable, more durable concrete. It is used in ready-mix plants, block and concrete products plants, in lightweight and prestressed work. It is also used by contractors in field equipment such as job site plants and pavers.

ADVANTAGES:

The use of **CEMTEC WRA** produces a plastic concrete that is more workable, easier to place and more finishable than plain concrete or concrete treated with other admixtures. In the hardened state, **CEMTEC WRA** concrete has higher compressive and flexural strengths at all ages than an untreated or conventionally admixed concrete.

This gives the following advantages:

- Water reduction provides strength increases of 15 - 30% at all ages.
- Economy in mixing due to improvement in strength.
- Reduced permeability of the hardened concrete.

At the same water/ cement ratio:

- Better control of hydration provides strength increase 10 - 20% at all ages.
- Improved concrete flow and slump 3 - 6 cm over an untreated mix. Better vibration response and finish.

CHEMICAL ACTION

As a dispersing agent, **CEMTEC WRA** lessens the natural interparticle attraction between cement grains in water. It does this by colloidal action, which forms a coating on the cement particles. This reduces their tendency to clump together, and makes the mix more workable with less water.

As a cement catalyst, **CEMTEC WRA** speeds hydration of the particles and counteracts the normal retarding effect of a dispersing agent alone.

CEMTEC WRA increases the rate of formation of gel, the paste or binder that "glues" concrete aggregates together.

The increased gel content adds to the water retention and internal cohesiveness of the mix, reducing bleeding and segregation as it increases workability and placeability.

ADDITION RATE:

Excellent results are obtained using an addition rate of 0.2 to 0.4 ltrs./100 kgs. cement depending on job conditions.

DISPENSING EQUIPMENTS:

A complete line of accurate, automatic dispensing equipment is available. **CEMTEC WRA** may be introduced to the mix on the sand or in the water.

COMPATIBILITY WITH OTHER ADMIXTURE:

CEMTEC WRA is compatible in concrete with all air entraining admixtures such as **CEMTEC AEA**. Due to the slight air entraining properties of **CEMTEC WRA** itself, the addition rate may be reduced by $\frac{1}{2}$ to $\frac{2}{3}$. by combining the separate effects of air entrainment and dispersion, the water requirement of concrete may be reduced up to 20%. **EACH ADMIXTURE SHOULD BE ADDED SEPARATELY** While **CEMTEC WRA** contains no chlorides it is compatible with calcium chlorides in concrete mixes, again each should be added separately.

PACKAGING:

CEMTEC WRA is available in 210 ltr., 1000 ltrs drums or in 10,000 ltr. bulk tanks.

TECHNICAL INFORMATION

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

Mix Design

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

"High Quality Construction Chemicals"

COMPRESSIVE STRENGTH

Age	Specification (% of Control)	Control	Cemtec WRA mix (% of control)
3 days	min 110	100	117
7 days	min 110	100	116
28 days	min 110	100	112

ENGINEERS SPECIFICATION FOR CONCRETE WATER REDUCING ADMIXTURE:

Concrete shall be designed in accordance with ACI Standard Recommended Practice for Selecting Proportions for Concrete (ACI 211-70).

The water reducing admixture shall be **CEMTEC WRA** as manufactured by Construction Material Chemical Industries or equal. The admixture shall not contain chlorides. It shall be used in strict accordance with the manufacturer's recommendations. The admixture shall comply with ASTM Designation C 494, Type A water reducing admixtures. Certification of compliance shall be made available on request.

The admixture shall be considered as part of the total water. The admixture shall be delivered as a ready-to-use liquid product and shall require no mixing at the batching plant or job site.

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.