

## **Mode of Action of Concrete Admixture Water Reducing Agent**

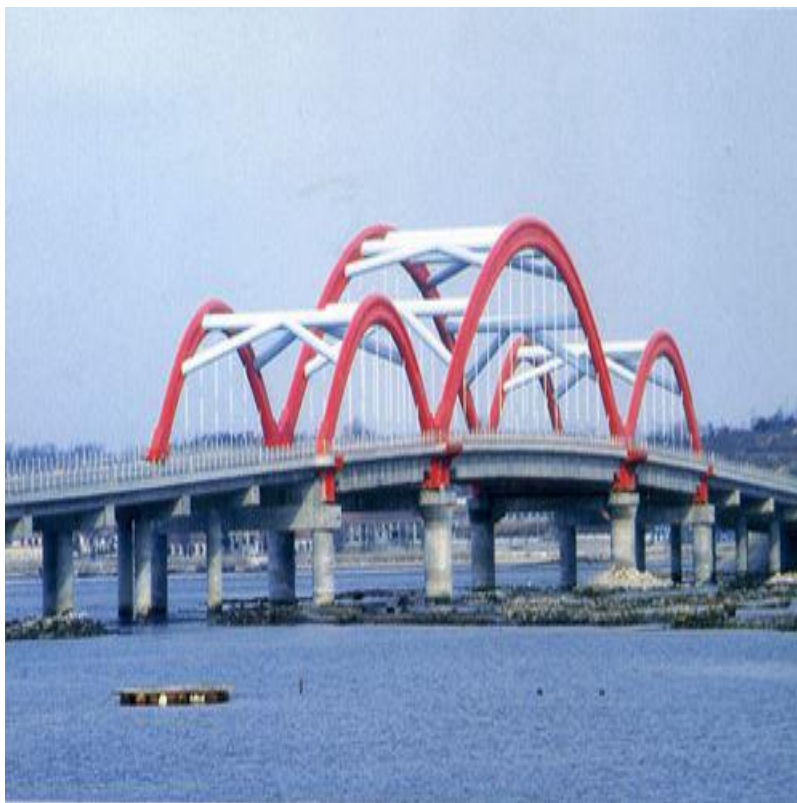
The principal role on mechanism of water reductions and set retardation of admixtures are usually composed of long-chain organic molecules and that are hydrophobic (not wetting) at one end and hydrophilic (readily wet) at the other. Such molecules tend to become concentrated and form a film at the interface between two immiscible phases such as cement and water, and alter the physio-chemical forces acting at this interface.

The mechanism by which Concrete Admixture Water Reducing Agent operate is to deflocculated or to disperse the cement agglomerates into primary particles or atleast into much smaller fragments.

This deflocculating is believing to be a physio chemical effect whereby the admixture is first of all adsorbed on to the surface of the hydrating cement, forming a hydration “sheath” , reduces the antiparticle separated from one another.

**Why This product are used?**

- a) Concrete having greater workability be made without the need for more water and so strength losses are not encountered
- b) By maintaining some workability, but at a lower water content, concrete strengths may be increased without the need for further cement addition
- c) While maintaining the same w/c ratio and workability, concrete can be made to a given strength as in the reference concrete at lower cement content.



**Effect on durability**

The straight addition of admixtures of Concrete Admixture Water Reducing Agent does not cause any increase in permeability and indeed where the admixture is used to reduce the w/c, then permeability is considerably reduced.

### **Effect on shrinkage**

Admixture of this type when used as workability aids on water reducers do not adversely effect the shrinkage.

### **Effect on creep**

Materials of this type of admixture have no deleterious effect on the creep of concrete.

### **Detrimental effect**

- a) While using water reducing agent. Care must be taken in controlling the air content in the mix. Most water-reducing agent entrain air due to their surfactant properties.
- b) At high dosages of lignosulphonate material, retardation of the mix occurs.