

## **Concrete Admixture Air Entraining Agent**

Concrete Admixture Air Entraining Agent are generally used to improve workability, ease of placing, increased durability, better resistance to frost action and reduction in bleeding. The common Air-Entraining agents are natural wood resins, neutralized vinsol resins, polyethylene oxide polymers and sulfonated compounds.

### **Mechanism of Air Entraining Concrete Admixtures**

Concrete Admixture Air Entraining Agent are anionic, because the hydrocarbon structures contain negatively charged hydrophilic groups, such as COO, SO<sub>3</sub> and OSO so that large anions are released in water. Conversely, if the hydrocarbon ion is positively charged, the compound is cation active or cationic.

In other words, anionic surface active agents produce bubbles that are negatively charged, cationic charged cause bubbles to be positively charged, surface active agents of all classes can cause air entrainment in concrete, but their efficiency and characteristics of air-void system vary widely.

### **Properties of Air entraining Admixtures**

\* Concrete Admixture Air Entraining Agent are foaming agents, gas producing chemicals. It introduces millions of tiny, stable bubbles of uniform size that are uniformly distributed throughout the mix (usually about 5% of the volume).

\* Improves properties of fresh concrete such as workability, cohesion and reduces segregation and bleeding.

\* Improves properties of hardened concrete – For every 1% of air there is a 4% loss in strength which is minimized by the reduction in water content. It improves durability of hardened concrete.

