ZX PCE High Range Water Reducing Concrete Admixture

Effect of water reducing agent in concrete

1, under the condition of without changing ratio of raw materials, adding concrete high efficiency water reducing agent, will not change the strength of concrete, at the same time can greatly improve the rheological properties of concrete and plasticity, makes concrete construction can be used in the form of gravity, pumping, no vibration and construction, improve the construction speed, lower energy consumption.

2, in the case of not changing the ratio of all kinds of raw materials (except water) and concrete slump, reduce the amount of water, can greatly improve the strength of concrete, early strength and late strength than without water reducing agent of concrete increase 60% and more than 20%, by reducing water, can achieve pouring C100 grade of high strength concrete.

3, in the case of not changing the ratio of all kinds of raw materials (except cement) and concrete strength, can reduce the amount of cement, adding cement quality 0.2%~0.5% of concrete water reducing agent, can save more than 15~30% of cement.

4, add concrete high efficiency water reducing agent, can improve the life of concrete more than twice, even if the normal service life of the

building is extended more than twice.

Synthesis method of ZX PCE High Range Water Reducing Concrete Admixture

For the synthesis of polycarboxylic acid superplasticizer, the design of molecular structure is very important, including the main chain group, side chain density and side chain length. The synthesis methods mainly include in situ polymerization grafting, polymerization before functionalization and direct monomer copolymerization.

1. In situ polymerization grafting method

Polyether as unsaturated monomer polymerization medium, make the main chain polymerization as well as the introduction of side chain at the same time, the process is simple, and the synthesis of water reducing agent to molecular weight can be controlled, but this method involves the esterification reaction is reversible reaction, in water solution on grafting rate is low, has gradually become obsolete E14].

2. Polymerization before functionalization

This method is mainly to synthesize the main chain of water reducing agent first, and then introduce the side chain into other methods for functionalization. This method is difficult to operate, because the molecular structure of water reducing agent is not flexible and the compatibility of monomers is not good, so the use of this method has been greatly limited.

3. Monomer direct copolymerization

This method is to prepare active large monomer first, and then copolymerize small monomer and large monomer in aqueous solution under the initiation of initiator. As the synthesis technology of large monomer becomes more and more mature and more and more kinds of large monomer, this synthesis method has become a common method for the synthesis of poline acid superplasticizer.