



Concrete Admixtures

Admixtures are additions to the mix that are used to achieve certain goals. Here are the main admixtures and what they aim to achieve.

Accelerating Admixture: Accelerators are added to concrete to reduce setting time of the concrete and to accelerate early strength. The amount of reduction in setting time varies depending on the amount of accelerator used. Calcium chloride is the most common accelerator used but some specifications often call for a non-chloride accelerator (NCA) to prevent corrosion of reinforcing steel.

Retarding Admixture: Retarding admixtures are often used in hot weather conditions to delay setting time. They are also used to delay set of more difficult jobs or for special finishing operations.

Fly Ash: Fly ash is a by-product of coal burning plants. Fly ash can replace Portland cement in the mix. Cement and fly ash together can greatly improve a mix. Fly ash:

- improves workability
- is easier to finish
- reduces the heat generated by concrete
- can reduce the cost of the mix

Air Entraining Admixtures: Must be used whenever concrete is exposed to freezing and thawing, and to deicing salts. Air entraining agents entrains microscopic air bubbles in the concrete: when the hardened concrete freezes, the frozen water inside the concrete expands into these air bubbles instead of damaging the concrete. Air entrainments:

- improve concrete workability
- improve durability
- produce a more workable mix

Water Reducing Admixtures: Reduces the amount of water needed in the concrete mix. The water/cement ratio will be lower and the strength will be greater. Water reducing admixtures are popular due to adding slump to concrete while not compromising the strength of the concrete.

Additional Questions?

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