

Chemical Admixtures

Admixtures are concrete ingredients other than cement, water, aggregates, and mineral fillers. Admixtures are common in today's concrete and provide many benefits. Admixtures are most commonly used to:

- Reduce Cost
- Ensure quality
- Increase delivery time
- Placing in less than ideal conditions
- Increase workability without adding water
- Improve segregation
- Reduce slump loss

Each project and all weather conditions have special needs when it comes to placing concrete. Admixtures help by making the concrete perform as needed even when the weather conditions aren't cooperating. Unlike a special concrete mix that may need a few days to design, admixtures can be used as a last minute fix to make up for unpredictable weather reducing construction delays.

Types of Admixtures

Retarders –

Retarders are used to slow down set time. Generally a retarder is used when temps are 80 degrees and above.

Accelerators –

Accelerators are used to increase set time. Accelerators are used primarily during cold weather when temps are 32 degrees or lower. Accelerators can also be used in mixes containing fly ash and for paving. Accelerators make it possible for concrete to be driven on in less than a day.

Mid –Range Water Reducer –

Water reducer is used to decrease the amount of mix water that is needed. Mid Range Water Reducer is used to increase slump for easier placement without increasing the water/cement ratio and losing strength.

High-Range Water Reducer –

High range Water Reducer is also referred to as Super Plasticizer. A High Range Water Reducer is used primarily when a pump is needed to place concrete and to make super flowable concrete like SCC. Higher doses of High Range can provide an



almost liquid consistency that can flow into forms and still harden at the required strength.

Air Entrainment –

Air Entrainment is used primarily for Freeze/Thaw resistance. With Air Entrainment, tiny bubbles are added to the mix. Air-entrainment is used primarily in exterior concrete that is exposed to moisture and in regions that experience freeze/thaw. These tiny bubbles give water a place to go and freeze during cold temperatures. This helps minimize frost heave and cracking from extreme temperature changes.

