

# jobsite addition of water

## Definition

Jobsite addition of water is the addition of water to ready mixed concrete in a truck mixer after arrival at the location of the concrete placement. Such tempering of concrete may be done with a portion of the design mixing water which was held back during the initial mixing, or with water in excess of the design mixing water, at the request of the purchaser.

## Why Add Water at the Jobsite

When concrete arrives at the jobsite with a slump that is lower than that allowed by design or specification and/or is of such consistency so as to adversely affect the placability of the concrete, water can be added to the concrete to bring the slump up to an acceptable or specified level. This can be done when the truck arrives on the jobsite as long as the specified slump and/or water-cement ratio is not exceeded. Such an addition of water should be in accordance with ASTM C 94, Standard Specification for Ready Mixed Concrete.

The ready mixed concrete supplier designs the concrete mixture according to industry standards to provide the intended performance. Addition of water in excess of the design mixing water will affect concrete properties, such as reducing strength, and increasing its susceptibility to cracking. If the purchaser requests additional water, in excess of the design mix, the purchaser assumes responsibility for the resulting concrete quality. The alternative use of water reducing admixture or superplasticizer to increase concrete slump should be considered. Provided segregation is avoided, increasing the slump of concrete using admixtures usually will not significantly alter concrete properties.

## Proper Addition of Water at the Jobsite

- a. The maximum allowable slump of the concrete must be specified or determined from the specific nominal slump plus tolerances.
- b. Prior to discharging concrete on the job, the actual slump of the concrete must be estimated or determined. If the slump is measured, it should be on a sample from the first 1/4 cubic yard of discharged concrete and the result used as an indicator of concrete consistency and not an acceptance test. Tests for acceptance of concrete should be made in accordance with ASTM C 172.
- c. At the jobsite, water should be added to the entire batch so that the volume of concrete being retempered is known. A rule of thumb that works reasonable well is – 1 gallon, or roughly 10 pounds of water per cubic yard for 1 inch increase in slump.
- d. All water added to the concrete on the jobsite must be measured and recorded.
- e. ASTM C 94 requires an additional 30 revolutions of the mixer drum at mixing speed after the addition of water.
- f. The amount of water added should be controlled so that the maximum slump is not exceeded. Once a portion of the concrete is discharged, no water addition is permitted.
- g. Upon obtaining the desired slump and/or maximum water-cement ratio, no further additional of water on the jobsite is permitted.
- h. A pre-concreting conference should be held to establish proper procedures to be followed, to determine who is authorized to request a water addition, and to define the method to be used for documentation of the water added at the jobsite.
- i. Maximum allowable water addition without exceeding w/c specification will be included on ticket.