Concrete Slump
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Excess water in fresh concrete leads to high shrinkage, cracking and loss of strength; while too little water in fresh concrete restricts its flow and makes it hard to compact. The slump test gives an indication of the quantity of water in the fresh concrete, although slump is also influenced by the grading of the fine and coarse aggregate, the shape of the aggregate and the quantity of cement.

Often concrete with an initial slump of 80 mm will stiffen rapidly, particularly in hot or windy conditions and concreters will request that “water be added” to the mixer trucks. If no other adjustments to a mix are made, 50% increase in slump from 80 mm to 120 mm could result in a reduction in strength of approximately 25%.

To avoid this problem of uncontrolled addition of water on site, it has been proposed that building regulations permit an increase in the allowable slump to 100 mm, accompanied by the adjustment at the batching plant to achieve the specified properties and stronger enforcement on the prohibition of adding water on site.

This training module deals in detail with questions related to the slump of concrete:

- What slump should be specified?
- What is the effect of adding water to concrete once it has left the batching plant?
- What proposals are being considered to improve the quality of concrete?

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