

Sampling Fresh Concrete

Tips to ensure accurate, representative samples

On almost every concrete paving project, the contractor or concrete supplier must demonstrate that a quality product is being supplied and delivered to the construction site. This typically requires the contractor to take a sample of the fresh concrete.

However, improper handling or sampling may result in strength, air, slump, or temperature measurements that are inaccurate. A few tips on sampling fresh concrete are provided below.

- 1. Sample Size** - Obtain at least 1 cubic foot (0.03 cubic meter) of concrete for strength tests. If combining tests (e.g. air, slump, and strength all from same batch), obtain approximately enough concrete to fill about two thirds of a standard wheelbarrow.
- 2. Key Equipment** - Use a scoop or shovel, wheelbarrow, or plastic sheet. Remember that other equipment is needed for the appropriate tests, such as beam or cylinder molds, slump cone, rod, air pot, etc.
- 3. Precautions** - Make the sample as representative as possible. Do not restrict flow from mixers. Guard against segregation of concrete during sampling.

Taking samples will be different depending on what type of mixer, truck, or container from which it is obtained:

Paving Mixers - Collect sample from five different places in the pile (i.e. end dump truck) after discharge of the mixer.

Other Stationary Mixers, Revolving-Drum Truck Mixers, or Agitators - Take sample at two or more regular intervals at about the middle portion of the batch and not at the beginning or end. Either pass a receptacle through the entire discharge stream or divert the stream completely.

Open Top Mixers or Containers - Use either method above, whichever is more applicable.

Transport the sample to where the fresh concrete tests are to be performed, remix as needed, and cover it with a plastic sheet to prevent evaporation.

For more information on sampling fresh concrete, see Portland Cement Association (PCA) publication PA015.05. To order, visit PCA's website, www.cement.org.

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