



Slump Test

Your Concrete

- An Overview

ARMCON
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Slump Test Your Concrete

Top Tips

- Make a slump test part of a regular testing schedule
- Ensure all equipment is free from hardened concrete before it is used in the test procedure
- The equipment should also be damp, but not wet with excess water, before it is used in the test
- Always fill the cone in thirds and ensure each layer is properly compacted before adding the next
- If you are unsure of the procedure refer to BS EN 12350-2 or contact the Armcon Precast expert.

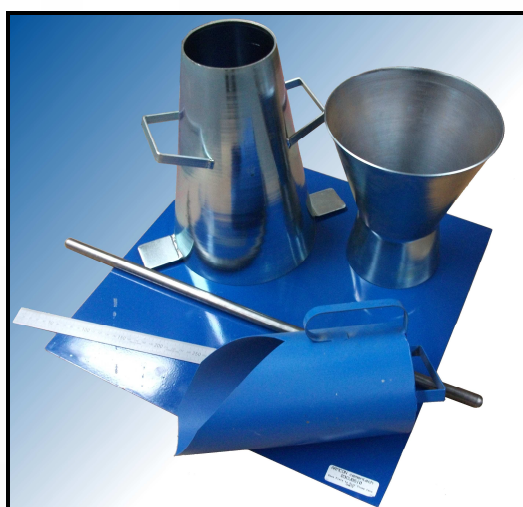
Overview

Slump tests are one of the most common in-situ/on-site compliance tests that can be performed by operators of concrete production equipment. The test itself is designed to test consistence (or workability as its more commonly known), which is important when determining the compatibility of the concrete with its intended use, whilst indirectly checking the water content and verifying the free water/cement ratio of the concrete.

The test is used for concrete with a target slump of between 10 and 200mm, outside of these values alternative test methods should be used. The test itself is controlled by the British Standard EN 12350-2, which is used to support the main stand for concrete EN 206-1.

Equipment

The standard EN 12350-2 outlines the test method that should be used as well as identifying the equipment used for carrying out the test, a picture showing all this equipment is shown below.



The equipment used is a slump cone which is 300mm high, with a top diameter of 100mm and a 200mm bottom diameter, used to fill the cone is a funnel which fits over the smaller diameter of the slump cone. A square base plate is used to sit the slump cone on and it needs to be flat, rigid, as well as non-absorbent which usually means it is made from steel. A tamping bar is also required, this is usually made from steel with a 16mm diameter, rounded at both ends and 600mm in length. The test will also require a standard sampling round mouth scoop and a 300mm steel ruler. To perform the test completely a sample size of 5.5 litres will be required.

Performing the test

The test itself can be spilt into 6 simple steps

1 – Equipment preparation and making the first layer

Place the cone onto the square base plate, now hold the cone in place with your feet by using the tabs attached at the bottom of the slump cone and use the scoop to fill the cone to about one-third full. (Note the sample stockpile and test equipment should be kept close together during the test if it is being done by one person).

2 – Compacting the first layer

Using the tamping bar compact the first third, the compaction only requires 25 strokes which should be evenly distributed across the concrete.



3 – Fill the cone in thirds

Repeat the filling and tamping technique described above and when compacting the layers allow the bar to just penetrate the layer below

4 – Level off and clean

The tamping bar is now used to level off the top of the sample; this is done with a sawing action across the top of the cone. Clean away any excess concrete from the base of the cone, this is usually done by using a cloth to remove unwanted concrete.

5 – Slump cone removal

The cone now needs to be removed, this is done in stages; firstly place your hands on the handles ensuring you press down onto the cone, now remove your feet placing them behind the cone and off the plate, the cone should now be raised vertically upwards with a smooth and steady motion. The motion should avoid lateral or twisting movements which will disturb the concrete and may give a false result.

6 – Measure the slump

With the cone removed place it with the small diameter on the plate and next to the concrete, place the tamping rod across the top of the cone and use the steel ruler to measure the distance between the top of the concrete and the underside of the bar.

