

Strength of materials and concrete technology laboratory

The Strength of materials and Concrete Testing Laboratory contains facilities for conducting tests on metals, fresh concrete, and hardened concrete. The laboratory has facilities for mixing, casting, curing, and testing concrete cylinders, beams, and reinforced concrete structural members. The capacity of the laboratory is about 20 students.

✓ Tests carried out on metal

1. Universal testing machine

The figure shows the universal testing machine. Many tests could be carried out by this machine as follows:

1. Tension test.
2. Compression test.
3. Bending test



2. Hardness testing machine

The tests that can be conducted by this machine are:

- a) Brinell hardness test
- b) Vickers hardness test
- c) Rockwell hardness test



✓ **Tests carried out on fresh concrete**

1. Air Content in Concrete

Through this test, the air entrainment in fresh concrete can be determined.



2. V-BE compaction tester

The main test carried out by this equipment is the Compaction of fresh concrete.



3. Slump Test Equipment



✓ Tests carried out on hardened concrete

1. Universal testing machine

Figure shows the universal testing machine.

Many tests could be carried out by this machine on hardened concrete such as compressive strength test and bending test.

2. Density of Hardened Concrete

The figure shows the tester that used for determination of the density of hardened concrete.



✓ **Tests on Aggregates**

1. Los Angles Machine

The main tests carried out by this machine:

is the resistance to abrasion and wearing of
aggregate



2. Speedy Moisture Content of aggregates

This device is used for speedy evaluation of
the moisture content of aggregates.



✓ **Non-Destructive Tests on concrete**

1. Digital Schmidt hammer

This device can be used for estimation of the Compressive strength of concrete.



2. Rebar detector and cover meter

This device is used for detection of rebar positions and cover thickness.

