



DEPARTMENT OF CIVIL ENGINEERING
ADVANCE MATERIAL TESTING LABORATORY

Advance Material Testing laboratory was established in Department of Civil Engineering in the year 2016 with an area of 89 m² to strengthen ongoing research and testing activities. Thrust area of this lab are to investigate different material properties such as tensile strength of rebar, cables and plates, compressive strength of concrete blocks, tiles and flexural strength of members etc. The detailed descriptions of the equipment are listed below:

a) Universal Testing Machine (Computerized)

Manufacturer: Aimil Ltd. (An ISO 9001: 2015 certified company)

Capacity: 1000kN

Universal Testing Machine (UTM) is fully automatic calibrated machine designed to test rebars, cables, plates and metals under tension, compression and bending both in the form of test pieces and as finished product. It is also designed for testing the compressive and flexural strength of several construction material and members. The load is applied by a hydrostatically lubricated ram and strains are automatically recorded by the machine. All the tests are performed under the Indian Standard and ASTM guidelines under experienced supervisor.



Universal Testing Machine of 1000kN Capacity

b) Compression Testing Machine (Computerized)

Manufacturer: Aimil Ltd. (An ISO 9001: 2015 certified company)

Capacity: 3000kN and 300kN

The Compressive Testing Machine (CTM) is fully calibrated with a clearance of 900mm. It is used to test compressive strength of concrete cubes, cement cubes, bricks, tiles, concrete cylinder of length 800 mm. It can also be used to test the strength till M110 grade concrete. Modulus of Elasticity and poisson's ratio can also be determined using this machine. All the tests are performed as per Indian Standards and American Society for Testing and Materials (ASTM) guidelines under competent supervision.



a.

a. Compressive Testing Machine of 3000kN Capacity



b.

b. Compressive Testing Machine of 300kN Capacity

c) Flexural Testing Machine

Manufacturer: Aimil Ltd. (An ISO 9001: 2015 certified company)

Capacity: 300kN

The Flexure Testing Machine (FTM) is designed to test flexural strength of concrete and wooden beams. The FTM machine is fully calibrated and can support sample of 700mm and 900mm in length. It can apply one and two point loads on a beam. All the tests are performed under the guidelines of Indian Standard and ASTM.



Flexure Testing Machine of Capacity 300kN

d) Concrete Permeability Testing Machine

Manufacturer: Aimil Ltd. (An ISO 9001: 2015 certified company)

The design of concrete mix aims at maximum durability for the conditions prevailing at the site where it is to be used. Ability to resist the flow of water through is one of the important durability characteristics. The permeability is determined on cement, Mortar and concrete specimens, either cast in the laboratory or obtained by cutting out cores from existing structures. The Permeability test is carried out as per the standard IS: 3085 and US Bureau of Reclamation.



Permeability Testing Machine of Capacity 300kN