INSTITUTIONALIZED RESEARCH LAB "CIVIL ENGINEERING STRUCTURES"

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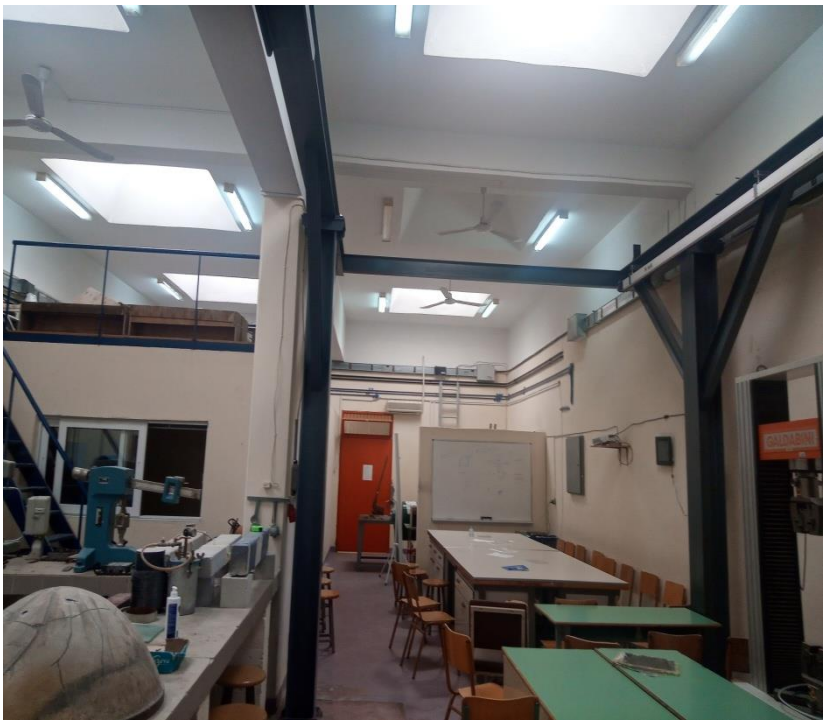
Lab staff: Dr C. Repapis – Assoc. Professor
S. Denezaki- Lecturer
D. Drivas- MSc – Adjacent Faculty-Candidate Dr
X. Palios-Dr Civil Engineer
L. Chrysafopoulou-Laboratory Staff.

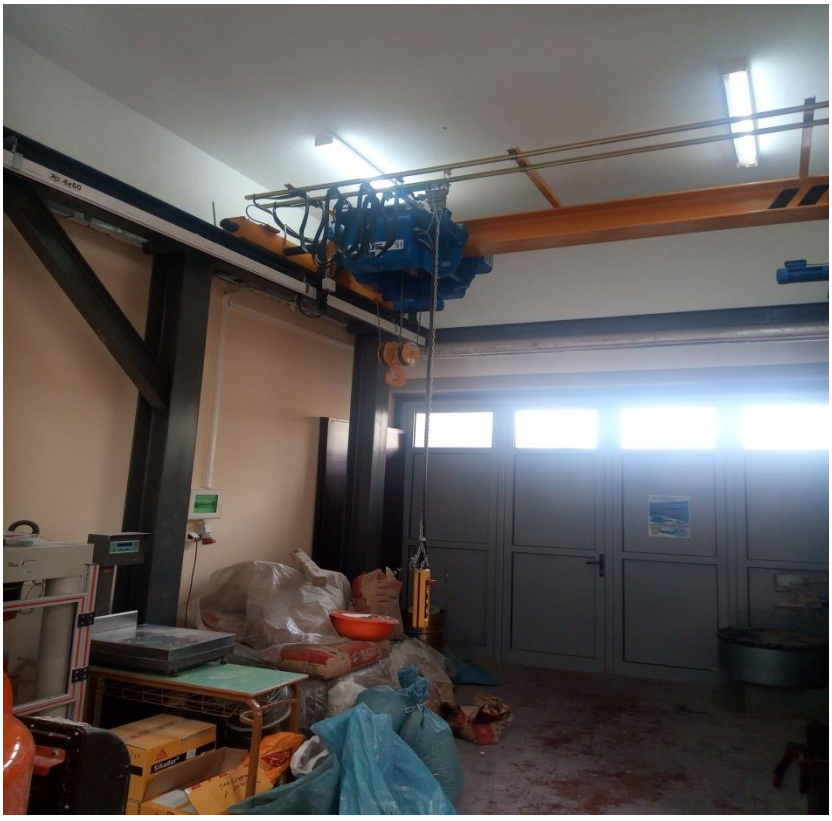
Laboratory «Civil Enineering Structures» at Civil Engineering Department was founded according to FEK 1041/B/03.06.2015, which was replaced by FEK 984/B/08.04.2016. The subjects of Civil Engineering fulfilled by the activity of Laboratory are summarized, as follows:

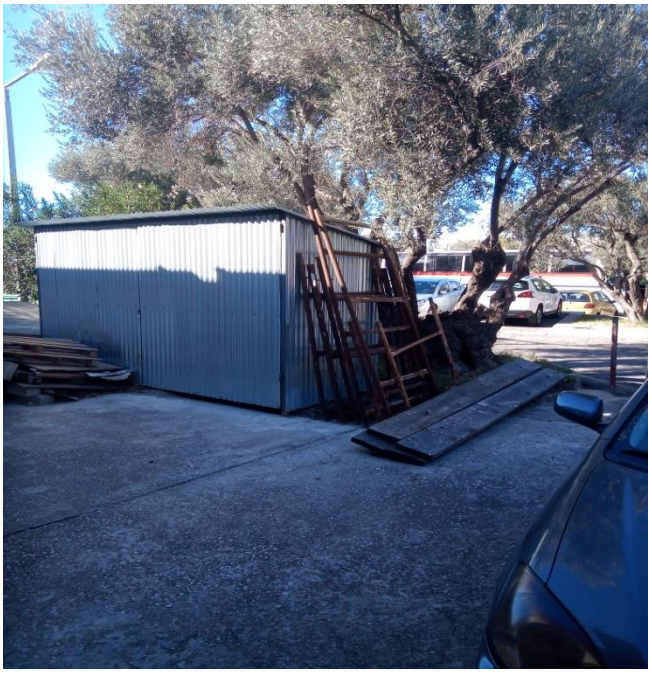
- Certificate report concerning the evaluation of any material strength used in Civil Engineering Structures and in general the determination of material properties.
- Behavior of any shaped small- or large-scale structures made of unreinforced and reinforced concrete under monotonic or dynamic or repeated loading.
- Fiber reinforced, shotcrete and self-compacted concrete.
- Repair and strengthening of Civil Engineering Structures using conventional or composite materials (FRPs or Plates).
- Seismic response of structures.
- Applied mechanics (static, dynamic analysis) of structures.
- Material science.
- Fracture mechanics and failure diagnosis at Civil Engineering structures.
- Structural Analysis.
- Rehabilitation of structures and experimental evaluation of mechanical properties and strength of soil samples and various materials forming Civil Engineering Structures under various loadings with destructive or non-destructive methods.
- Determination of rebars at structural elements by scan apparatus.
- FEM analysis applying to study behavior of structures.
- Static or dynamic analysis of new structures and repair or retrofit of existing Civil Engineering structures.
- Impact or fatigue loading of structures.

In the Lab, various tests are executed from the staff, i.e. the Director, Professors of the Department or in cooperation with other Departments, candidate Drs and post or undergraduate students, which work for preparation of experiments concerning the lesson "Reinforced Concrete Laboratory Testing" and the preparation of their MSc or Doctoral theses.

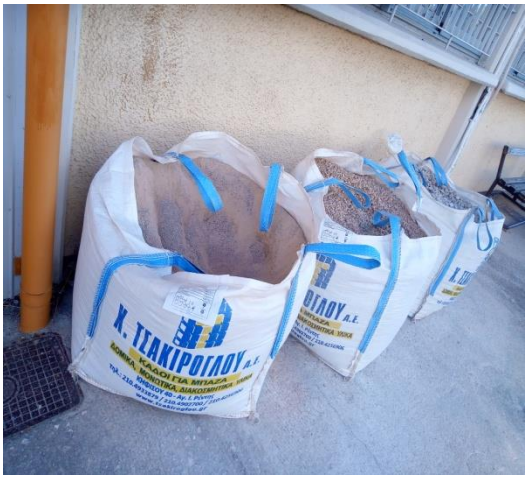


CIVIL ENGINEERING STRUCTURES RESEARCH LABORATORY

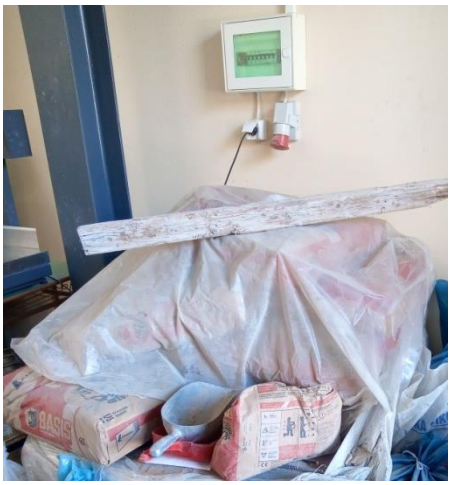




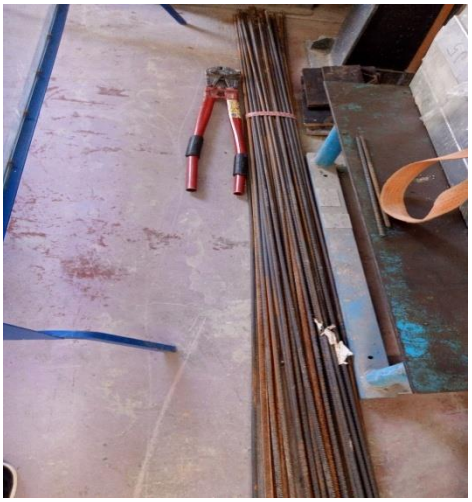
External store of Laboratory.



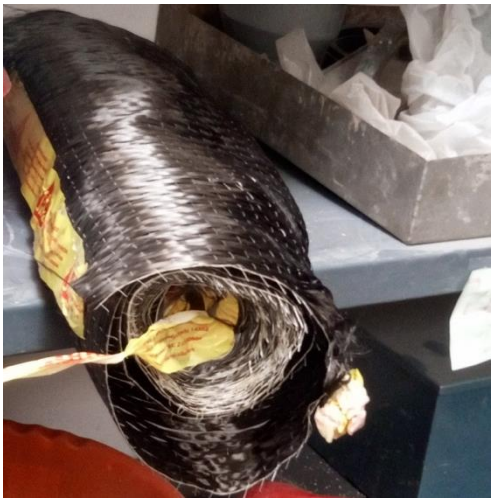
Aggregates.

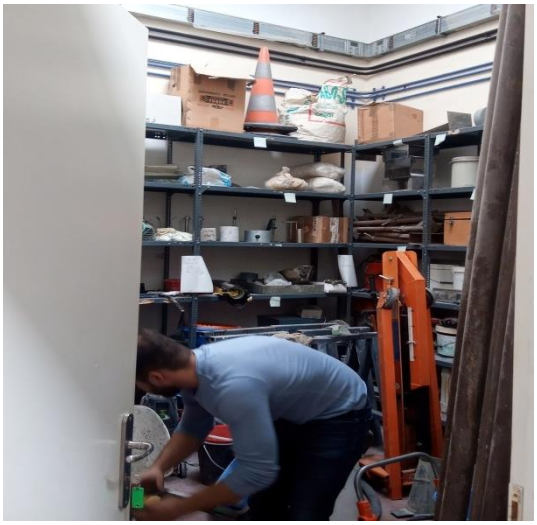


Cement.

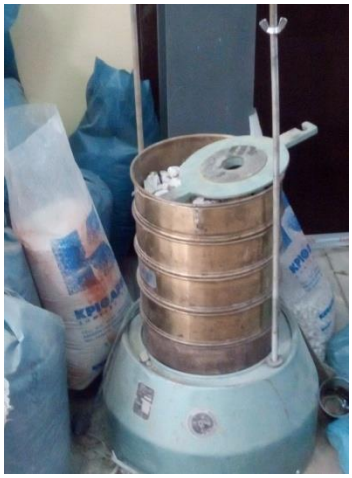


Steel rebars.

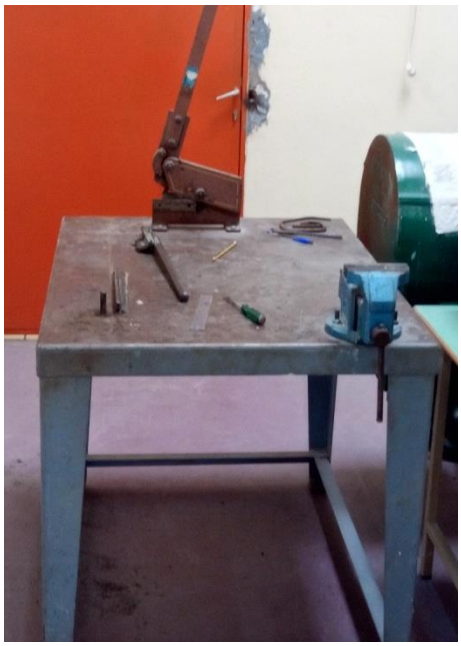
CFRP. 



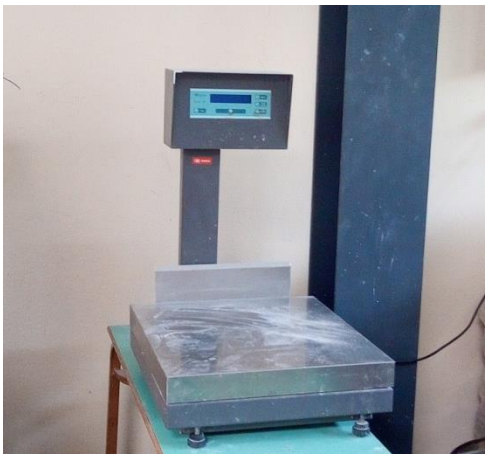
Internal Storeroom of Laboratory.



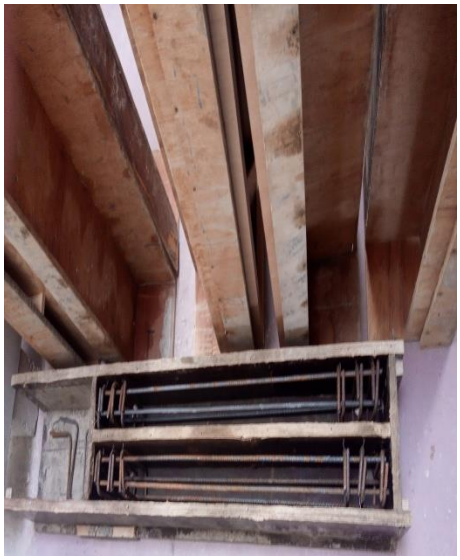
Sieving apparatus for aggregates.

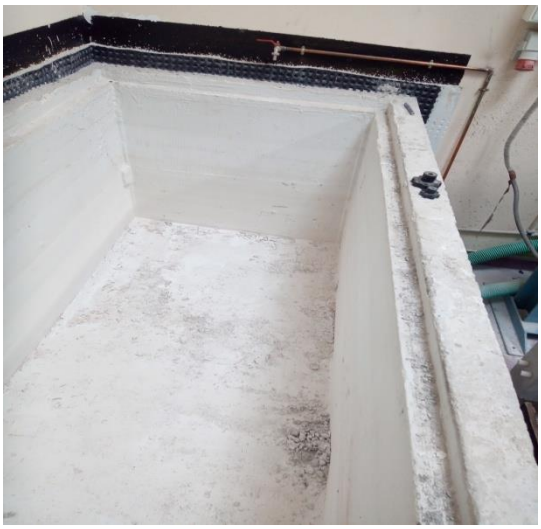


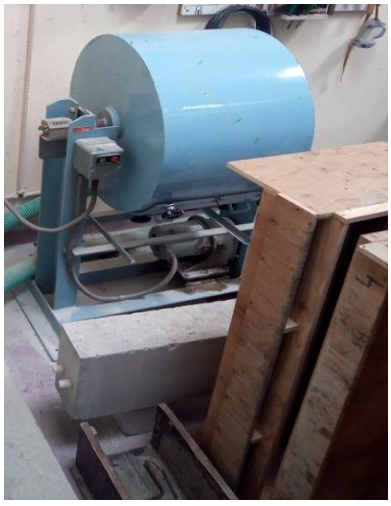
Cutting and formation apparatus for steel rebars.



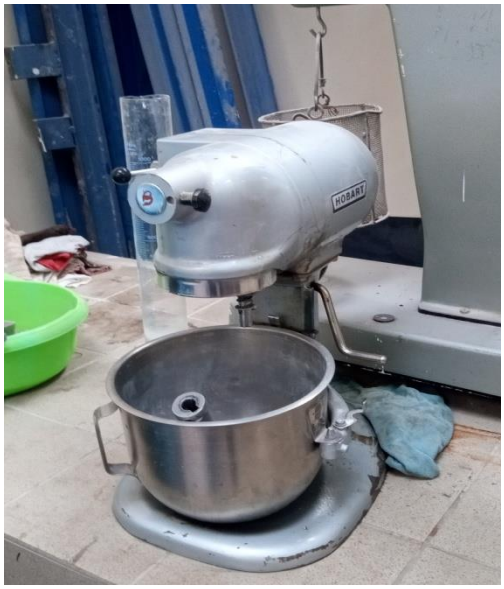
Electronic scale.

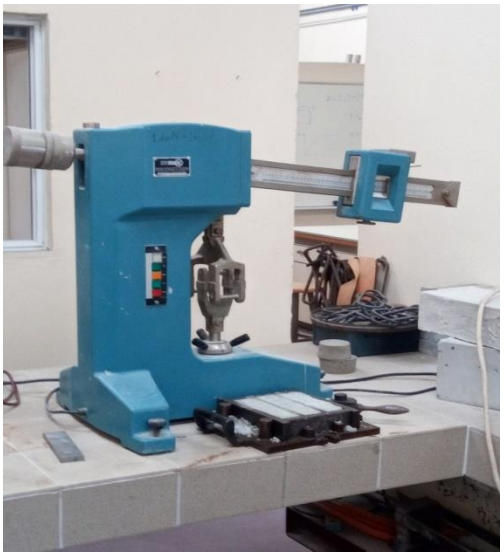
Moulds for casting reinforced concrete beams. 

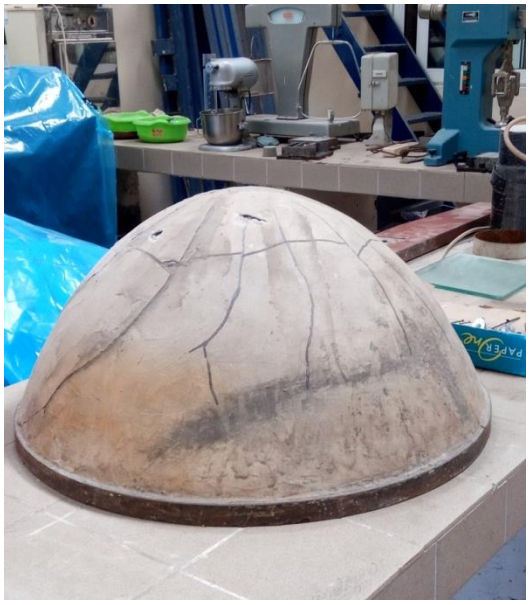
 Water vat for curing of concrete specimens.

Los Angeles machine for friction test of aggregates. 


Moulds for casting cement mortar specimens.

Mixer for production of cement mortar.



Bending apparatus for cement mortar specimens.

Fractured cement mortar dome. 

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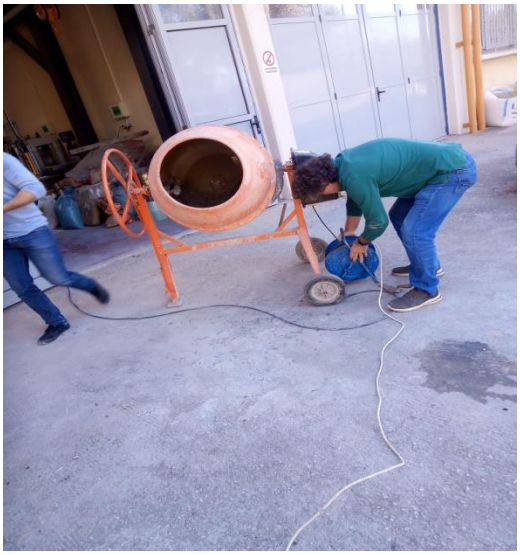
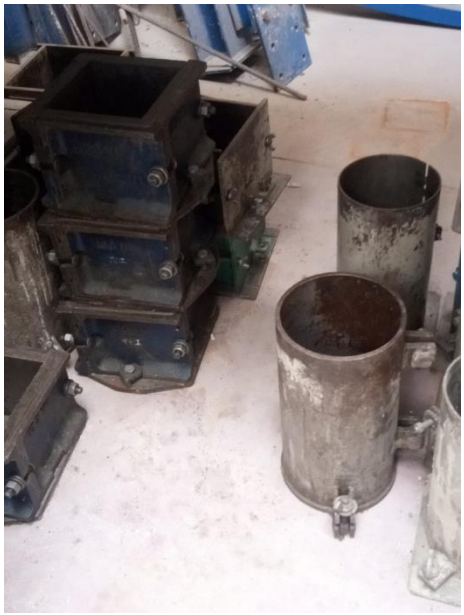
Tension/compression machine for testing rebars.

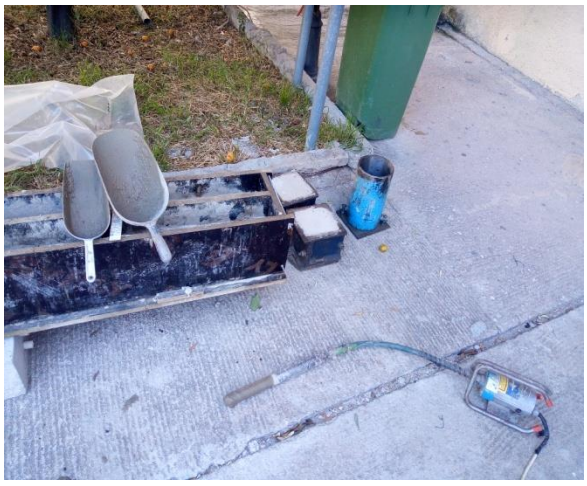
Mixer for concrete production. 



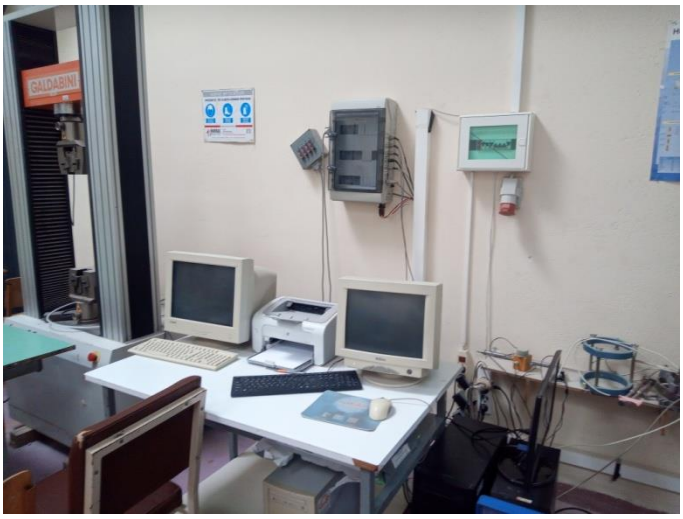
Mixer for concrete production.



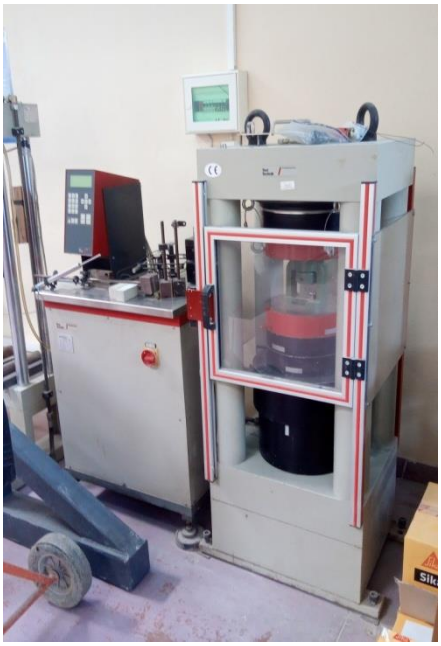
Cubic and cylindrical steel moulds for concrete.

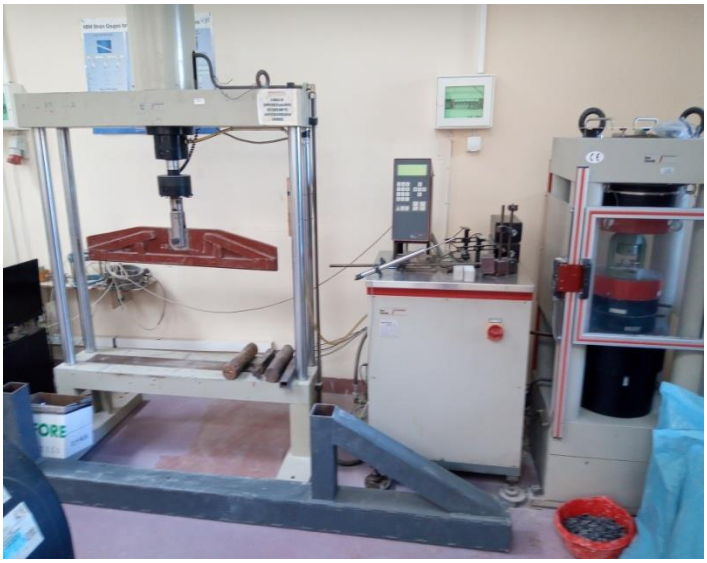


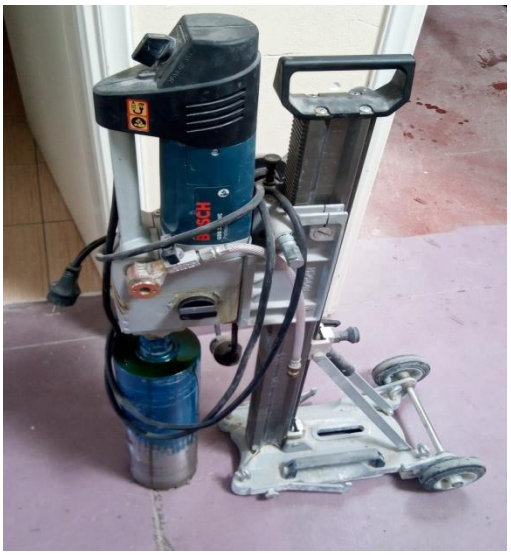
Casted RC beams.

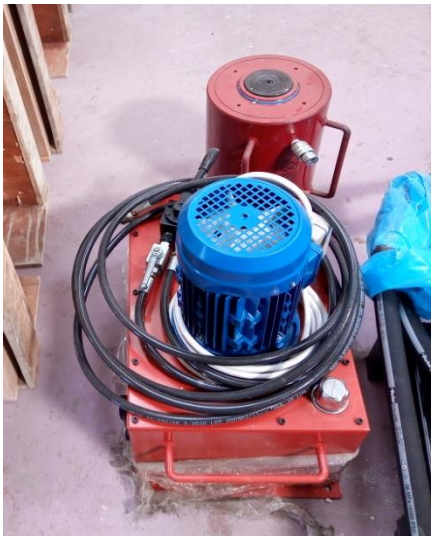


Computing area.

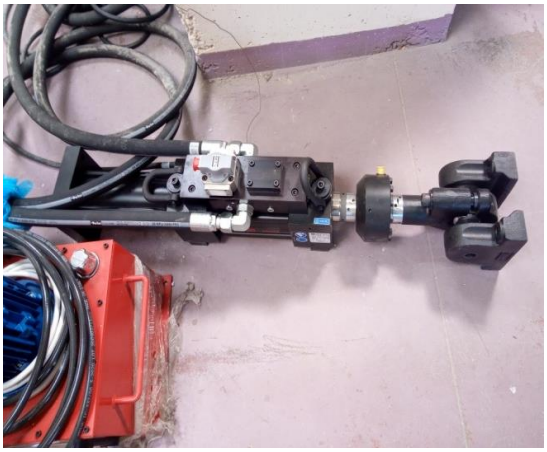

Compression machine for concrete specimens.

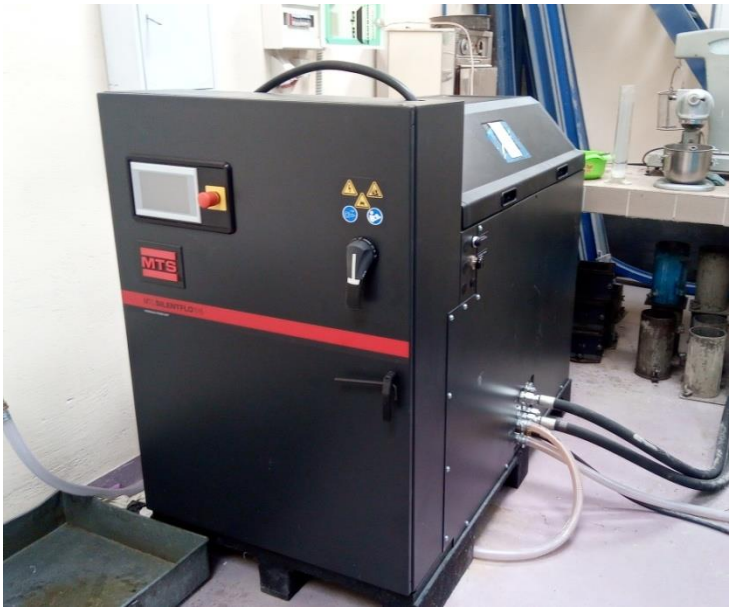

Bending machine for beams.

Apparatus for concrete core extraction. 

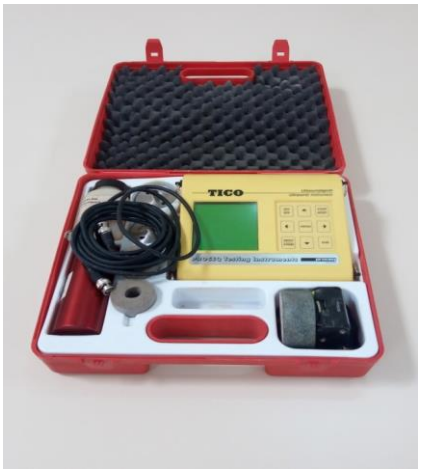


Piston for static loading of 100 kN capacity.

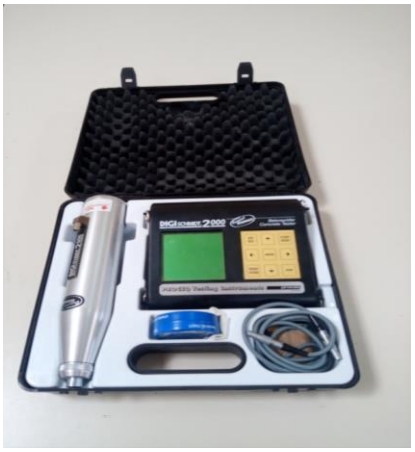
Piston for seismic loading of 100 kN capacity. 



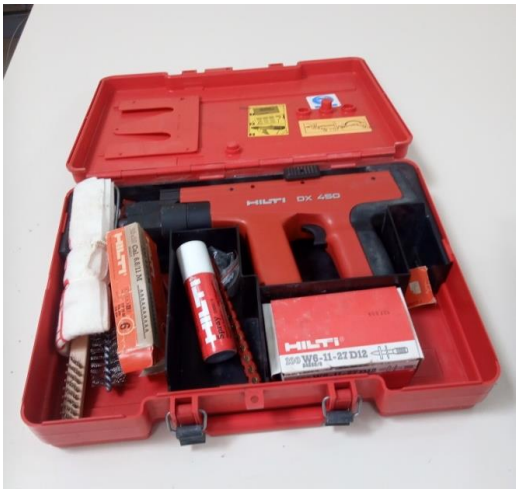
Oil pump for pistons.



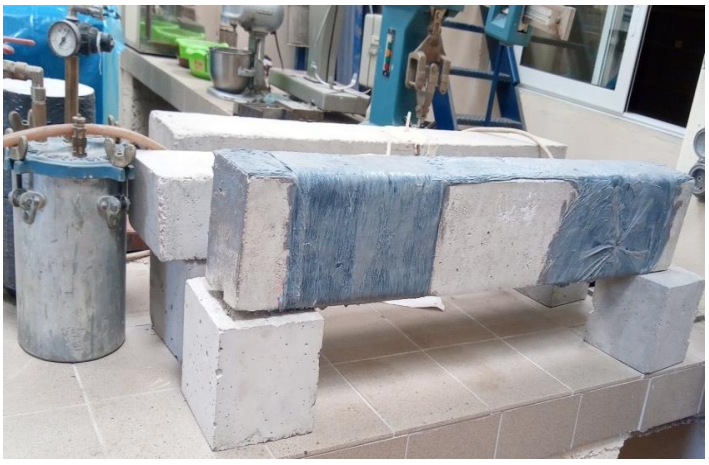
Ultrasonic emission apparatus for concrete strength estimation.



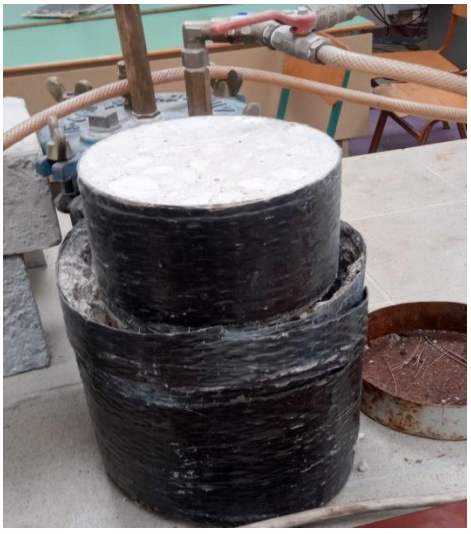
Impact gauge apparatus for estimation of concrete strength.



Pull-out test apparatus for concrete strength estimation.



Strengthened RC beam by CFRP.



Failure of strengthened concrete cylinders by CFRP.