

**Call for application for research scholarships  
for post-graduate international candidates**

**RESEARCH PROJECT N. 10**

**Title:**

Soil tunneling in urban area (acronimo: SoTuA)

**Scientific responsible (name, surname, role)**

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**Short description of the research activity (max 250 words)**

EPB tunnelling has experienced a great increase in the number of applications in the world. This results has been possible from one side thanks to the mechanical development of the machines and from the other thanks to the more effective use of additives (foams, polymers, bentonite, fillers) injected from the cutter head and in the bulk chamber and mixed in the soil: i.e. "soil conditioning".

In this frame it is proposed a research on the effects of conditioning on different types of soil

The research will be developed following this scheme:

- 1) analysis of the results of the tests that has been carried out in the laboratory "Tunnelling and Underground Space" of DIATI Dept. Politecnico di Torino to prepare a global frame;
- 2) bibliographic analysis of the test that has been carried out in other research centres and comparison with the results of the data of point 1;
- 3) development of specific laboratory tests in the laboratory Tunnelling and Underground Space of DIATI of Politecnico di Torino and analysis of data. These tests will be managed
- 4) development of a new type of tests on soil conditioning to assess the compressibility of the mix.

Points 1 and 2 will have the goal to prepare a paper.

**Specific requirements (experiences, skills)**

Preferably Engineer with knowledge of geotechnical engineering and soil mechanics.

**Keywords (min 3, max 6)**

Tunneling, mechanized excavation, soil conditioning, geomechanics

**Research Area (max 1)**

Structural, Geotechnical and Building Engineering