



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL

EM TESTING
and METROLOGY

UMR

Rock Mechanics Laboratory

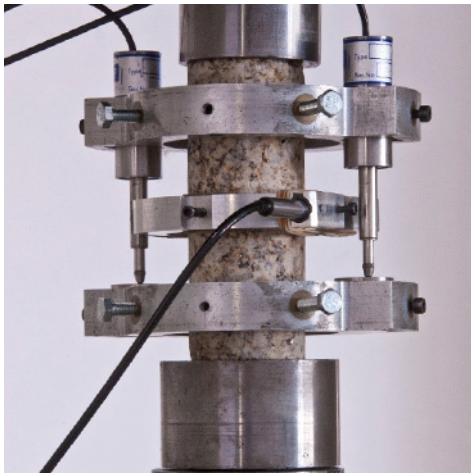
CONCRETE DAMS DEPARTMENT

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Scope

The Rock Mechanics Laboratory (UMR) is a non-accredited laboratory of LNEC-EM, which is integrated in The Concrete Dams Department of LNEC. It has an infrastructure that comprises several experimental equipments to carry out tests aimed at characterising the mechanical properties of rock materials by the execution of laboratory tests for determining the main properties related with strength and deformability of rock and joints.



Field of expertise

The results of the tests performed at UMR are used in support to the design and monitoring of works with foundations on rock masses or integrated in the latter, namely dams, slopes, tunnels and underground caverns.



UMR conducts various laboratory tests on samples of rocks and joints in accordance with the procedures adapted from international standards, such as the following:

- Simple compression tests on rock specimens with determination of the failure stress, modulus of elasticity and Poisson's ratio
- Triaxial compression tests on rock specimens with determination of the failure stress, modulus of elasticity, Poisson's ratio and strength parameters
- Joint sliding tests with determination of the strength and deformability
- Diametral compression tests (Brazilian)
- Point load tests



Highlights

UMR is the sole laboratory in which both the triaxial compression and the sliding tests are carried out in a systematic way, which makes it possible to characterise the rock and joint strength, essential parameters for the design of projects on or in rock masses.

Apart from these tests, UMR also performs innovative tests aimed at research activities, which due to their specificity require the development of new equipments or the adaptation of existing test procedures.

