



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL

ENSAIOS
e METROLOGIA

UDinE

Structural
Dynamics
Laboratory

Framework

The Structural Dynamics Laboratory (UDinE) is part of the Earthquake Engineering and Structural Dynamics Division, which is integrated in LNEC's Structures Department, being equipped with the experimental infrastructures necessary for the development of R&D&I activities.



Main activity

The UDinE dedicated to the characterization of the seismic behavior and vulnerability of large structures subjected to seismic actions of different intensities to imminent global collapse conditions of structures or substructures.



LNEC-3D shake table

The LNEC-3D shake table where the models to be tested are placed and fixed, has the shape of a triangular prism with the following characteristics: useful dimensions 4,6x5,6m²; maximum capacity of 40 tons;

three independent orthogonal axes; displacements controlled actively, passively restricted rotation (torsion bars); frequency range 0 to 40Hz.



R&D&I experimental studies

Seismic testing in the development of assisted reinforcement techniques and seismic rehabilitation of complete structures close to the real scales (1: 1.5 to 1: 2) or full scale substructures.



Seismic tests of experimental evaluation and assisted development of passive systems and mitigation of semi-active seismic stresses in structures.



Seismic qualification studies

Dynamic tests of seismic qualification of equipment and components for the manufacturing industry and distribution of electricity.



Main services provided

The UDinE conducts studies to assess the seismic vulnerability of important structural systems (eg buildings and bridges) using based performed methodologies on objective and performance levels previously defined. These studies are based on the experimental determination of the dynamic behavior of structures essential in the implementation of reinforcement solutions for the mitigation of seismic vulnerability for one or more performance objectives established.

Av. do Brasil 101
1700-066 Lisboa • Portugal
tel. (+351) 21 844 30 00
fax (+351) 21 844 30 11
lnecc@lnecc.pt

Head of Laboratory
Alfredo Campos Costa
fax: 21 844 37 97
alf@lnecc.pt

www.lnecc.pt