



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL

**TESTING
and METROLOGY**

UAVE

BUILDINGS DEPARTMENT

Acoustics and Vibration
Laboratory

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Scope

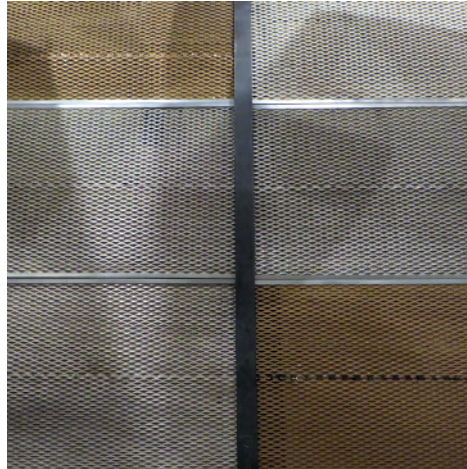
The Acoustics and Vibration Laboratory (UAVE) is integrated in the Buildings Department/Acoustics, Lighting, Building Components and Facilities Unit of LNEC. The UAVE is included in the Quality Management System of LNEC-EM by adopting the requirements established in the standard NP EN ISO/IEC 17025. Its creation back in 2005, in the Buildings Department of LNEC, was aimed to meet the needs for providing support to the studies of characterisation of the acoustic behaviour of solutions and systems used in the building construction.



Field of expertise

The UAVE activity is mainly focused on the characterisation of the acoustic behaviour (sound absorption and insulation) of solutions and systems used in the building construction, namely:

- Partition walls, façade elements, glazed areas, doors, small technical elements, Wall coverings, blinds, floor coverings, pavements;
- Acoustic barriers;
- Construction materials and sound absorbing systems;



The UAVE conducts the following laboratory tests, for the characterisation of the acoustic properties of elements and/or construction systems:

- Airborne sound insulation;
- Sound insulation to percussion sounds;
- Sound absorption of materials and systems, in diffuse field;
- Sound absorption of materials under the normal incidence of plane sound waves (impedance tube);
- Determination of the sound power of noise sources based on the measurement of the sound pressure.



Highlights

The UAVE interaction with its costumers covers different perspectives, such as:

- Dissemination of knowledge;
- Activities in support to the development and acoustic characterisation of new materials and systems;
- Participation in planned research studies, within the scope of the evaluation of vibrations in buildings, environmental acoustics, and human perception to noise and vibration in buildings.
- Advisory and support services to the acoustic design of new constructions or to maintenance and rehabilitation activities;
- Advisory and support services to environmental impact studies, within the framework of the acoustic component of the environment and environmental vibrations.

