LABORATÓRIO NACIONAL DE ENGENHARIA CIVIL

TESTING and METROLOGY

UHM

Metrological Hydraulics Laboratory

HYDRAULICS AND ENVIRONMENT DEPARTMENT

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Scope

LNEC-EM's Hydraulics Metrology Laboratory (UHM) is an experimental infrastructure with competences in the field of applied hydraulics metrology, and since 2021 it has been a Designated Institute for the flow and velocity quantities of liquid flows.

This laboratory, part of Hydraulics and Environment Department (DHA) of LNEC, consists of hydraulic test platforms and reference instruments able to support the traceability of flow measurements in both laboratory and field settings, ensuring the quality of measurements in measurements such as flow rate, flow velocity, level, volume and precipitation.

UHM is integrated into LNEC-EM's (Quality) Management System, adopting the requirements of compliance with the NP EN ISO/IEC 17025 standard.

Field of expertise

LNEC has an internationally recognized infrastructure for testing and calibrating equipment and measurement systems applied in hydraulics and hydrology. The UHM has human resources and technologies capable of developing activities in the field of metrology and metrological information management across a variety of water resource management domains (water supply, undue inflows, agro-industry uses, and wastewater treatment), and in various market contexts (management entities, industry, manufacturers, clients, among others).

Furthermore, LNEC has R&D competencies, combining experimental infrastructure with different fields of Engineering and Sciences, conducting studies and advanced consultancy, aiming to develop metrological management solutions and good measurement practices.

Highlights

The UHM interacts with the market from multiple perspectives, ranging from knowledge dissemination and the development of calibration methods to provide traceability, the implementation of solutions aimed at ensuring the quality of measurements in systems and networks. Some impactful actions include:

- Disseminating knowledge related to measurement quality and traceability, as well as training entities in metrological management of experimental information.
- Developing flexible response capabilities to market needs and traceability methods (e.g., associated with electromagnetic and ultrasonic flow meters, turbine counters, spillways, rotameters, and udometers, among others).
- Evaluating integrated measurement systems in economic activities where water resource management is particularly relevant, namely in industry, agro-industry, and networks of management entities.

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