



LABORATÓRIO NACIONAL  
DE ENGENHARIA CIVIL

**TESTING  
and METROLOGY**

**UADinE**

Structural Aerodynamics  
Laboratory

STRUCTURES DEPARTMENT

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## Scope

The Structural Aerodynamics Laboratory (UADinE) is integrated in the Structures Department/ Earthquake Engineering and Structural Dynamics Unit of LNEC.

It is equipped with two wind tunnels: a closed cycle aeronautical one, with a  $3.0 \times 1.2 \times 1.0 \text{ m}^3$  test chamber and a continuously variable speed up to about 45 m/s; and an open cycle boundary layer one, with a  $9.0 \times 3.0 \times 2.0 \text{ m}^3$  test chamber and a continuously variable speed up to about 17 m/s.

It carries out, in cooperation with UMA (Applied Metrology Laboratory), accredited tests for the calibration of anemometers.



The scientific activity of UADinE, by providing an assisted development of optimised solutions, is performed in different fields of the wind action, such as in the assessment of the following:

- Behaviour of building structures and façade elements;
- Aerodynamic stability of bridges;
- Conditions of comfort and pedestrian safety in open spaces;
- Vibrations induced on tower and chimney structures;
- Aerodynamic behaviour of vehicles;
- Building ventilation conditions;
- Wind potential.

## Highlights

Special reference is made to the evaluation of the aerodynamic stability conditions of suspended bridges (*25 de Abril, Arade, Vasco da Gama, Edgar Cardoso and 516 Arouca*).

The contribution to the design of structures and sub-structures of buildings.



## Field of expertise

The UADinE carries out its main activity within the field of wind action on structures by performing wind tunnel tests over scaled models.

