



CENER

CENTRO NACIONAL DE
ENERGÍAS RENOVABLES

NATIONAL RENEWABLE
ENERGY CENTRE



WIND ENERGY DEPARTMENT

The **National Renewable Energy Centre of Spain -CENER-** is a technology centre specialized in applied research and development as well as the promotion of renewable energies. CENER is divided into six departments: Wind Energy, Photovoltaic Solar Energy, Solar Thermal Energy, Biomass Energy, Bioclimatic Architecture and Renewable Energy Grid Integration.

More info: www.cener.com

The **Wind Turbine Test Laboratory** is an infrastructure required to perform test on wind turbines, encompassing the analysis of individual components to complete wind turbines, in accordance with international standards. These new facilities with a total surface area of 30.000 m² includes the following areas: Blade Test Lab, Power train test Lab and electrical testing, Composite materials and process Lab, Wind turbine field testing, Experimental wind farm & Aerodynamic Wind Tunnel.



BLADE TEST LABORATORY

CENER offers the Wind Energy Sector the possibility to perform tests of WIND TURBINE BLADES.

This laboratory performs structural tests on the blades in accordance to IEC TS-61.400-23 Standard: Characterization of physical properties, Static and Fatigue Tests.

GENERAL INFORMATION:

- **Two Test Bench:**
 - 1 Static & Fatigue Tests: max bending moment 100,000 kNm (Static Tests)
 - 1 Fatigue Tests: max bending moment 50,000 kNm
- Test Hall dimensions: 85m (L) 32m (W) 15m (H)
- Two overhead cranes (2 x 32 Tons). One crane with a trolley and the second crane with two trolleys.
- Root diameter: 4,6 meters.
- **Effective blade length of up to 75 meters.**
- **Static tests on sections of blade with a nominal length of 100 meters.**

CENER BLADE TEST LABORATORY

is accredited to carry out the following tests:

- Determination of natural frequencies
- Modal Analysis
- Static Tests
- Fatigue Tests
- Post-Fatigue Tests
- Collapse Tests

CENER has tested many blades for some of the largest blade manufacturers.

(www.enac.es)

CENER is accredited by ENAC-Spanish National Accreditation Body. UNE-EN ISO/IEC 17025. Exp nºbc: 355/LE803.