

# Wind Turbine Mechanical Testing

Optimise the performance of wind turbines and ensure compliance with international regulations.



To be approved for use on a wind farm, all the parts of a wind turbine must be tested to ensure they will perform consistently regardless of the mechanical loads and environmental influences they are subject to. The blades must undergo full-scale structural testing for proof of compliance with international safety regulations, like IEC 61400-23. Then, the blades' subcomponents must also be assessed for their structural integrity, as well as the components making up the rest of the turbine.

## Your testing partner for wind turbine structural validation

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We perform bespoke test plans to help you optimise your components as well as the set test methods required for certification. We have extensive facilities for performing **cyclic and quasi-static rotor blade tests under IEC 61400-23** (complete rotor blades), and use **advanced simulation and measuring tools** for exceptional precision in our results. What's more, our project management expertise and in-house test tooling capabilities mean we can **meet the tightest of deadlines** – both from our Spanish and German facilities.

Our facilities include:

- High-load universal testing machines (up to 15,000 Kn / 3,372 Kips)

- Large and versatile facilities for full scale testing (for cyclic and quasi-static tests under IEC 61400-23) and sub-component testing
- Testing under controlled temperature conditions
- State-of-the-art technology for data acquisition and test monitoring
- [Acoustic cameras](#) and advanced metrological equipment
- Damage verification with non-destructive testing equipment

## Expert quality assurance from the material level up

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While our structural testing services assist you in the validation stage, we have a global network of materials testing laboratories to support you all the way from RandD to certification for new turbines. All of our labs are ISO 17025 accredited and we have a huge park of universal testing machines (from 1N to 500Kn) available.

We offer advanced [composite material characterization](#) to help you select the best rotor blade materials, as well as [metallic material testing](#) and [fastener testing](#).

## Remote test monitoring to keep you in the loop

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Choose Applus+ Laboratories and benefit from our [e-Testing platform](#), designed to keep everyone up to speed, in real-time. Any member of your team can remotely monitor and even participate in the testing and gathering of results, depending on their assigned role.