



VIWA

Vertical Industrial Wind Access



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VIWA Ltd has in excess of 8 years' experience inspecting and repairing rotor blades throughout the UK & Europe combining experience from Aeronautical engineers, boat builders & of course our expert blade specialists.

VIWA has been serving as a UK company for more than 10 years according to UK Health and Safety, Environmental & Quality Management requirements.

We are using the most advanced rope access techniques and pioneer new developments of access equipment such as powered rope ascenders, mobile access platforms, etc. providing high cost efficiency and minimizing environmental impact.

VIWA Academy was recently launched in 2015 to help make wind turbine owners and operators aware of the complexity of rotor blade damages, assist them in evaluating rotor blade inspection reports and repair quotations and to supply qualified service technicians for a fast growing wind power industry.

www.viwa-wind.uk.com

ONSHORE AND OFFSHORE ROTOR BLADE INSPECTIONS

Industry experience has proven that after two years of operation the possibility of damages on rotor blades increases as the blades begin to wear from exposure to elements & other influences. After five years of operation annual inspections are strongly recommended. Exposed glass fibre is not resistant to ultraviolet rays and will begin to absorb water. We work according the Principles for Monitoring the Condition Based Maintenance of Wind Turbines to ensure the delivery of inspection reports to the highest standards. We work closely to manufacturer's standards.

By using the latest rope access equipment we ensure the most time & cost efficient access to rotor blades while proudly ensuring the lowest environmental impact of all access methods. Our inspectors are not only specially trained rope access person- nel but also qualified rotor blade experts. They work hand in hand with our engineering department to deliver the following services:

ROTOR BLADE & TOWER INSPECTIONS

- Damage classification in an industry standard scoring system
- Internal rotor blade inspection as a standard part of rotor blade inspection
- Lightning receptor inspections and resistance measurement
- Damage assessment and repair recommendations by experienced engineers
- Management of reports on internet servers in behalf of our clients
- Tower flange corrosion inspections
- Torque control of tower bolts
- Safety inspection of internal ladder and fall arrest systems
- Inspections of turbine tower surfaces - internal and external

COMPOSITE FIBRE BLADE REPAIRS

- Delamination repairs
- Lead edge protection (Tape & Liquid application)
- Lighting damage repairs
- Warranty repairs
- Installation of Vortex Generators & Gurney flaps
- Root damages

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CLEANING OF ROTOR BLADES AND TURBINE TOWERS

We will clean your towers and blades with low impact, biodegradable cleaning agents and experienced operations from pre-saturated cleaning wipes to heavy jet wash equipment, depending on the kind of pollution.

- Environmental pollution at locations with agricultural environments
- Leaking grease and oil / hydraulic oil on towers and rotor blades
- Internal tower pollution of fungus due to insufficient ventilation

VIWA technicians have a wide range of experience on cleaning rotor blades and turbine towers as standalone operations or in combination with blade inspections during their inspection tours.

Corrosion protection and repairs on wind turbine towers

Tower flanges often are sealed with silicon. These seals perform their duty for only a short period. Water will begin to seep in and start the corrosion process on flanges and bolts. First evidence of flange corrosion are rusty stains running down from the flanges. The corrosion process inside the flanges should be prevented since corrosion will attack the tower bolts and in time will result in the bolts complete destruction.

VIWA recommends an industry proven sealing system which has specifically been designed for the application on wind turbines. The sealing system has been adjusted to withstand the stress on tower and foundation and can be applied to tower flanges, tower-foundation flanges and concrete foundations.

Composite Rotor Blade Repairs

Lightning strike damages, open trailing edges, failure of leading edge protection are common damages on rotor blades as is corrosion and hydraulic oil pollution on wind turbine towers. VIWA composite blade repair experts are working according to the latest repair standards.

Our mission is to complete as many blade repairs in situ as possible - years of experi- ence of VIWA technicians and engineers combined with the latest access technologies complement our added value.

Self-propelled platforms are an alternative access solution for more extensive blade repair operations. We are happy to provide and manage these in addition to our rope access solutions where required. More than that we undertake composite blade repairs on the ground - on site or at VIWA workshops.

We undertake all other kinds of repairs on wind turbine towers and safety systems where rope access methods have proven their benefits as the most appropriate access method.

Offshore and Special Operations

VIWA is at the forefront of Innovation. Our innovations include the unique environmental tents for on-site repairs reducing costs of blade transportation (no other tent system can withstand the elements as VIWA's dome tents). We have developed state of the art HD Video reports for clients as well as a small mobile tower platform (unique to VIWA). Please feel free to contact us for special requirements including:

- Qualified and experienced offshore teams for blade inspection and repairs
- HD video inspection for specific tasks
- Test systems for improving blade dynamics of in-situ turbines
- Repairs and special operations in a VIWA controlled environment on the ground

Health and Safety - Target ZERO

We at VIWA know about the challenge of using rope access methods and are aware of the importance of Health & Safety, Environmental and Quality Management. We work according UK legislation and are registered at Utilities Vendor Data Base (UVDB). We are Achilles B1 Verify accredited.





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