

Wind Energy Services

At Working AT Height Alti-Service (Our Approach)

With a knowledge-base developed over a decade of real world experience, **Working At height** Alti-Service (WindTec™) is uniquely qualified to deliver exceptional service and value. This combination of theoretical and practical understanding is at the root of the (WindTec™) philosophy, and underpins the three core attributes of our approach — cost-effectiveness, professional project management and Access — Anytime, Anywhere (AAA) & Safety — Service, Efficiency (SSE)

Cost-Effectiveness

There are many cost advantages to our rope access techniques, that when compared to other access methods, the benefits of the Working At height **Alti-Service (WindTec™)** approach are self-evident.

The best way to demonstrate the cost-effective nature of the Working At height Alti-Service Approach is to break down your project needs into sub-categories.

A pre-emptive philosophy

As with health care, there are situations where preventative maintenance is safer and more cost effective than emergency attention. When a routine cleaning/maintenance program is undertaken with (**WindTec™**) our technicians can pre-empt the need for expensive, reactionary repair jobs by spotting signs of trouble early. This proactive approach allows our customers to plan and budget for fleet wide issues and spread maintenance costs across the life of each turbine. At Working At height Alti-Service we take great pride in the integrity of our technicians and their ability to assess a situation, honestly and realistically. Their assessments are based solely on what is the right thing to do for the longevity of the turbine or blade. That's the Working At height Alti-Service way.

Response Time

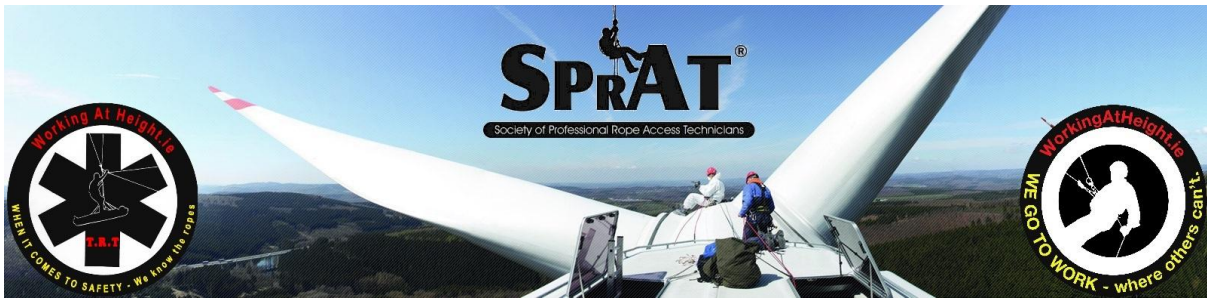
(**WindTec™**) technicians deploy using commercial airline flights for both themselves and their equipment. As a result, savings are realized due to quick response times and eliminating the need for heavy equipment rental, transportation and the possibility of schedule delays from unavailability.

Setup, Breakdown and Standby Time

Less time and fewer personnel are needed to get to work and to wrap up the job than with cranes, heavy lifts and hoists. Savings are realized in man-hours and in equipment costs. Reduced down-time costs due to weather result in large savings when compared with cranes and other lifts that have both daily use fees and personnel fees.

Mitigating Site Damage

Our environmentally sensitive approach eliminates the need for heavy equipment which means that there are no costs from either accidental tower or blade damage or post-job mitigation of negative environmental site impact.



➤ Professional Project Management

At the heart of a successful project outcome is a logistics exercise. Our Professional Project Management methodology to ensure your project runs smoothly. Synchronizing project scope, clearly defining parameters, safety evaluations, and detailed reporting are just some of the tools we use.

Our Professional Project Management methodology uses proven Fortune 500 disciplines to ensure that your project runs smoothly.

We start by carefully defining the scope of the project and sharing our experience from similar projects. With twelve years of industry experience, you can be sure that when you work with **(WindTec™)** you get a well thought out project estimate that is both realistic and accurate. The scale and complexity of many of the projects we handle are such that a company without this experience would likely subject the client to unnecessary expense.

The underpinnings of our approach are simple: communication, customization, safety and reporting.

Communication

Clearly delineated lines of communication and responsibility mean you know what's going on with your project from the very beginning. It also means knowing who to talk with to get your questions answered quickly and who is accountable if there are concerns.

Customization

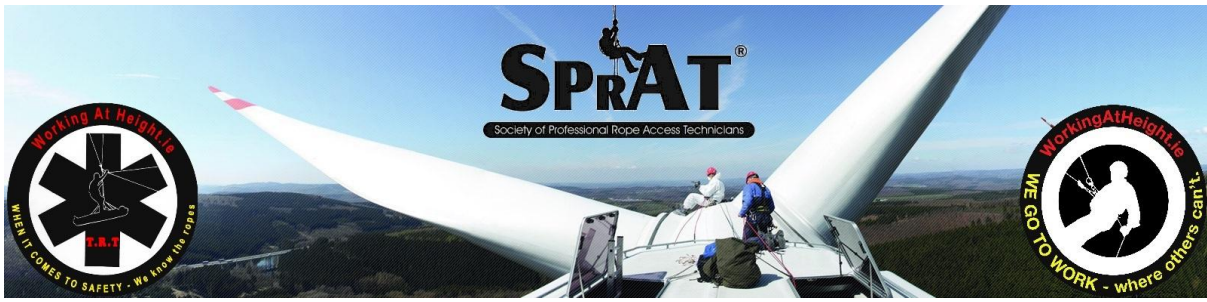
At **(WindTec™)** we don't sell you a "one size fits all" solution. We know that each project is unique and we ask the right questions and put the time in up-front to ensure that the job is done correctly the first time. We put the correct number of technicians with the right skill sets and high-quality tools necessary to meet time and quality requirements while operating with the highest safety standards.

Safety

Before any work begins, we work with our technicians to analyze potential hazards and design work practices that eliminate hazards whenever possible. For the hazards that must remain, we minimize the severity and duration of exposure to the risk of the work through protective gear, and creative and intelligent work practices. There's no better hedge against hazards than employing smart, well-trained and attentive technicians.

Reporting

Our articulate and tech-savvy technicians work hard to keep you apprised of the progress of your project through exemplary reporting and as much direct communication as you need. Working At height Alti-Service excels in delivering detailed reports for project back-up and record keeping. When the work is done you can be confident that you will have a comprehensive, precise document for your files that gives specific details of the work done.



AAA

Access — Anytime, Anywhere is what sets Working At height **Alti-Service (WindTec™)** and the rope access technique apart. Rope access allows for a fast, flexible and low impact approach to both routine maintenance and priority repair projects.

Access - Anytime, Anywhere is what sets Working At height Alti-Service apart. Rope access allows us to deliver a fast, flexible and low-impact approach to both routine maintenance and urgent ad hoc repairs.

Access

(WindTec™) technicians utilize an industry standard rope access system that enables complete 360° access to the tower, nacelle and blades. The technicians are comfortably suspended and can move freely from the tip to the nacelle quickly and easily. When necessary, separate bearing ropes and hauling systems are used to lift heavier equipment, tools and materials needed for the job. No other access technique provides this level of efficiency and flexibility for servicing hard-to-reach turbines or turbine components. In fact, Working At height **Alti-Service (WindTec™)** specializes in servicing the hard-to-reach areas of your turbines and our technicians can service all areas of the turbine, both internal or external, independent of height or manufacturer type. Rope access is ideally suited for maintenance and service requirements for remote or hard-to-reach units.

Anytime?

Yes. We have developed a reputation in the industry as the go-to team for rapid response. In many cases our technicians can be on your tower, working before others can even determine what is needed to be done.

Anywhere

Once again the flexibility of our approach means we can have a team on the way to even the most remote location often within hours of receiving notice that a problem has occurred.

SSE

Safety

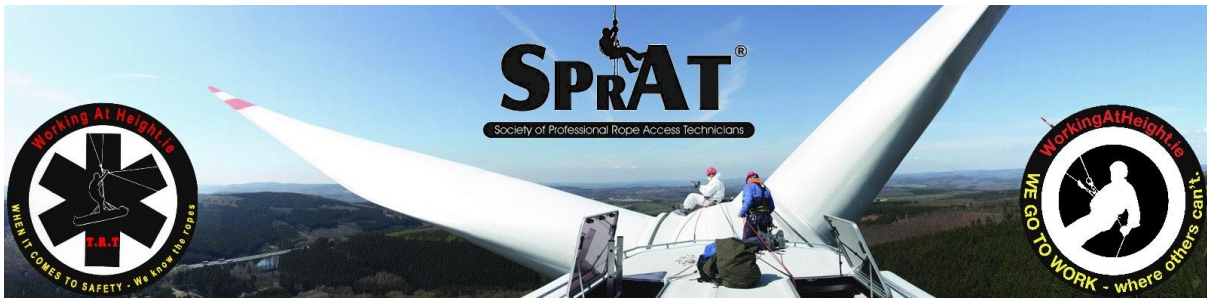
In our business there is no fundamental value that we prize more than the safety of our team, and that of our clients' employees who work with them out in the field. Being a member in good standing of these organizations is merely the outward facing manifestation of our most core belief. Of course it also ensures that we stay abreast of all current industry standards and best practices. Working At height **Alti-Service** works strictly in accordance with the safety guidelines developed in cooperation with both OSHA's general industrial safety orders and SPRAT (Society of Professional Rope Access Technicians) safe work practices.

Service

Working At height Alti-Service has earned the reputation as the most trusted name in wind turbine services. WindTec™ has both the experience and the professional expertise required to service and maintain wind turbines for all the stakeholders in the Wind Energy Industry: site managers, wind farm owners, equipment manufacturers, service companies and insurance companies.

Efficiency

As a Wind Turbine veteran of the wind energy services industry Working At height Alti-Service has had the privilege to partner with almost all the leading players in the field (both manufacturers and owners) to provide them with timely, cost effective and environmentally appropriate solutions for their needs.



Services

Mechanical:

Working At height **Alti-Service (WindTec™)** turbine technicians are fully qualified to undertake responsibility for caring for the mechanical requirements of almost all major manufacturers' equipment. Cable tray and bus bar remediation, inspection of cable pinch brackets, corrosion retrofits, dent removal on horizontal and erected towers, modifications under tower landings, conductivity testing of lightning protection systems and bolt torque testing are all undertaken by our technicians using state of the art tools and standardized mechanical engineering protocols.

Blade Repair:

Fiberglass & Blade repair In a perfect world all blade repair would be done on the ground—but that's not the real world. This reality means you need a team that can produce structurally sound repairs to manufacturers specifications 150 feet off the deck — which is where Working At height **Alti-Service** comes in.

Repairing fiberglass is both an art and a science. There is a right way and a wrong way but at the end of the day, the quality of the work is determined by the skill level and attention to detail of the technician. When it comes to rebuilding the entire length of a blade's leading edge there are no shortcuts. A disciplined, rigorous and fastidious attitude is what it takes to get the job done and you can count on Working At height **Alti-Service (WindTec™)** to deliver just that.

Experience and history matter for blade repair. In the Ireland alone we have performed significant repairs on over 15 blades, changed out over 50 receptors, replaced hundreds of aerodynamic stall strips and performed over 100 blade inspections, both internal and external. These included end-of-warranty as well as high-profile serial case inspections for well known blade manufacturers over the last two years.

Working At height **Alti-Service (WindTec™)** Fiberglass Program was initially developed in 2008. A leading blade manufacturer trained several of our technicians in all aspects of blade repair, from minor surface damage to entire tip replacements. We then integrated this knowledge into our **WindTec™** technician training (a combination of in-house trainings and on-the-job mentoring), and have participated in other manufacture trainings, constantly leveraging opportunities to expose our technicians to new technologies and work practices. We have performed extensive non-destructive testing operations for blade manufacturers using thermography to identify factory defects in blades and have been called in for quality control monitoring of major remediation projects.

Regardless of whether a blade was damaged in transit, during erection or delaminated by lightning strike, Working At height **Alti-Service** 's **WindTec™** technicians have the tools, skills and mindset to restore your damaged blade to optimal condition.

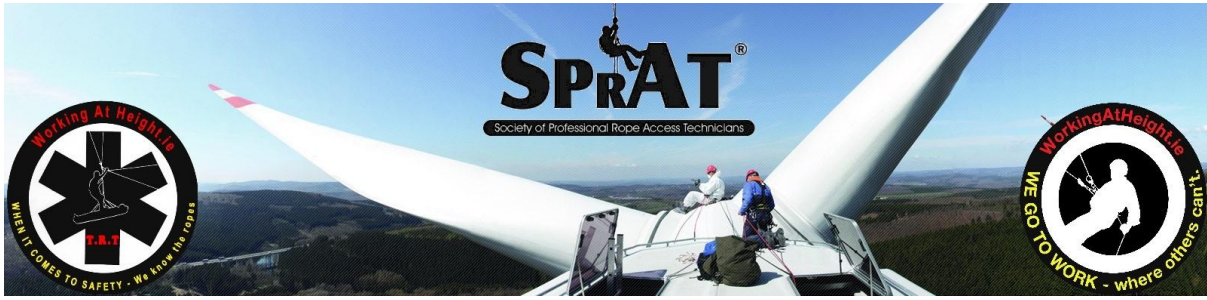
Our technicians are comfortable working on both epoxy and polyester based blades. In addition to blade repair we also provide a complete suite of fiberglass services for the whole tower including:

- Stall strip, vortex generator and Z-tape installations
- Installation and replacement of leading edge protective tapes
- Rotor blade pitch bearing seals
- Nacelle and spinner fiberglass repair

Inspection & Warranties:

➤ Scheduled Inspections

By leveraging the flexibility of rope access our **WindTec™** technicians provide thorough and unbiased turbine and blade inspection services. Working At height **Alti-Service** will either submit its own industry standard inspection reports or utilize a requested client format. We frequently work with clients to introduce a comprehensive scheduled inspection program, this improves failure identification and prevention, resulting in significant increases in turbine availability and reliability.



➤ **Warranty Services**

Working At height **Alti-Service** assists clients in clarifying warranty responsibilities through comprehensive inspections and reporting. Our thorough procedures and documentation allow both the turbine owner and the manufacturer to accurately assess damage and identify the cause. Working At height Alti-Service also routinely provides the follow-up warranty maintenance services required to resolve warranty issues.

Consultation:

As an industry veteran, Working At height Alti-Service is uniquely qualified, as well as being SPRAT certified to train individuals and groups in rope access techniques, project planning and emergency management procedures.

➤ **Consulting**

Over the last six years, the experience we have gained working on hundreds of turbines makes Working At height **Alti-Service (WindTec™)** the leading expert on the safest and most efficient way to tackle unique challenges. Our technicians work with your engineers, to create procedures that save both time and money.

➤ **High Angle Rescue Emergency Planning**

As the industry leader in industrial rope access techniques, particularly as they apply to turbine services, we have developed valuable safety and rescue methodologies to ensure worker safety and emergency management. We can also assist customers in the development of emergency management plans for any situation that involves workers at height.

Green Clean

➤ **Green Clean:**

Turbine Cleaning & Maintenance Services

Like the old saying goes, “If you talk the talk”... At Working At height **Alti-Service (WindTec™)** we take walking the walk seriously, which is why we developed our Green Clean tower, nacelle and blade cleaning protocol an environmentally mindful approach to industrial cleaning.

All of our Green Clean services including the cleaning of hydraulic and gear box oil and smoke residue, application of epoxy tower paint and weather caulking to exterior tower flanges are performed with the most ecologically appropriate supplies available, and when potentially harmful chemicals are demanded for the job, there is 100% containment of all materials used in the process.

➤ **Scheduled Maintenance**

While we are experts at emergency repairs, we believe that our preventative maintenance programs are cost-effective means to increase your turbines' longevity and improve output while facilitating early problem detection and reducing unexpected production failures.

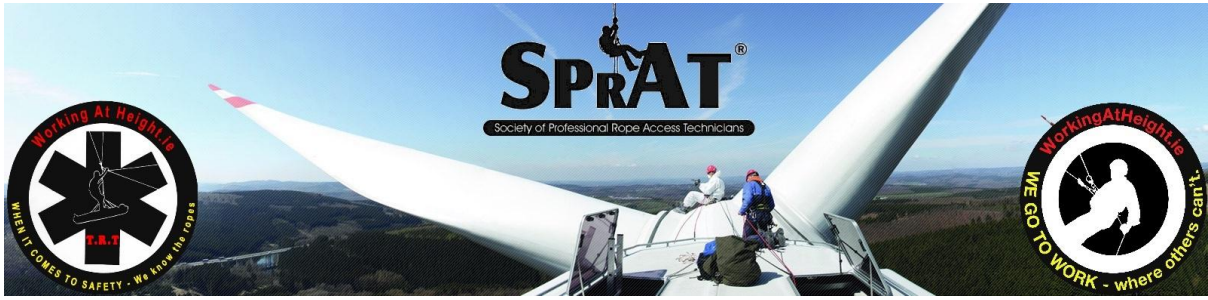
Keeping your turbines in good working order is easy when you utilize our easily deployed Working At height **Alti-Service (WindTec™)** technicians. Our routine maintenance menu includes: complete turbine cleaning, protective surface coating application and maintenance, lightning receptor conductivity testing, aerodynamic systems modifications, complete internal and external blade inspection and repair, and bolt torque testing. All of these services help to keep your turbines shiny clean and operating at peak availability.

Company Details.

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