



WIND ENERGY SERVICES

ropeworks®  
CENTER OF EXCELLENCE



MISTRAS Ropeworks blade technicians performing repairs during brief favorable weather windows on the southern tip of the big island, Hawaii. Kevin Thompson Photo



## WORLD-CLASS TECHNICAL TRAINING

Our people are chosen for their technical expertise and their positive attitude consistent with company values. Each team member undergoes world-class technical training in rope access and specialized disciplines such as inspection and composite technology.

Our blade team draws on extensive expertise gained from the wind energy and aviation industry.

Ropeworks builds on this experience with technical training provided by major blade manufacturers, industry-leading training organizations, and an in-house apprenticeship program. This broad experience base has helped build a reputation for quality and innovation in blade inspection and repair.

## SUMMARY OF BLADE SERVICES

Ropeworks' blade technicians take pride in delivering quality blade inspection and maintenance services including:

- Internal and external inspection
- Laminate and coating repair
- Construction assembly support
- Inspection and installation of lightning protection systems
- Repair and installation of blade protection and aerodynamic systems
- Spotting scope Inspections



# MISTRAS ROPEWORKS WIND SERVICES



The MISTRAS Ropeworks team specializes in inspection and maintenance of utility-scale wind turbines using industry-leading rope access and inspection technology.

## DELIVERING EFFICIENCY

We are committed to helping our customers deliver on the promise of efficient renewable power by minimizing the costs of inspection and maintenance and extending the useful life of the turbine.

Ropeworks technicians provide expedient and cost-effective service because they don't rely upon lifts or cranes to complete most work. The work is completed safely, efficiently, and economically with a focus on minimizing downtime of the asset.

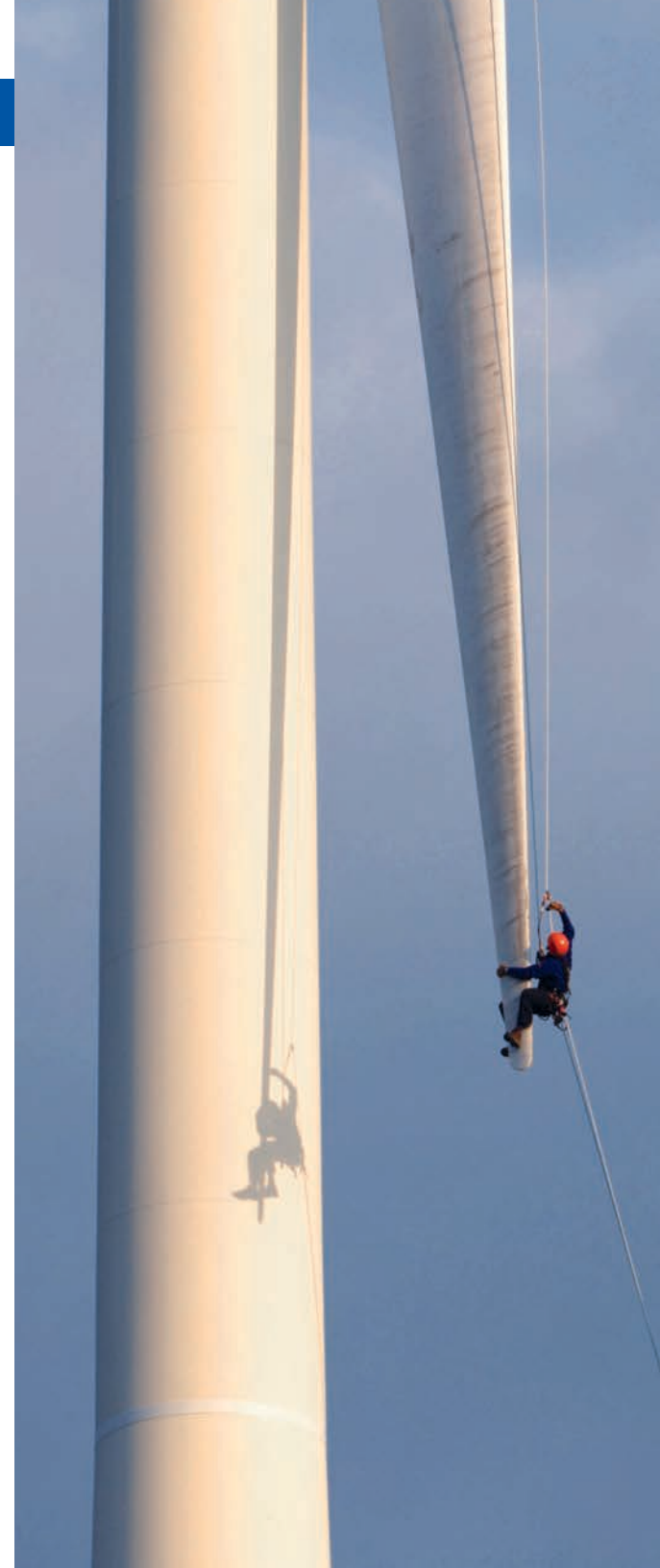
Ropeworks certified technicians are committed to professionalism, safety, and exceptional customer service. We are passionate about delivering our best work.

## GLOBAL REACH

With team members based in the US, Canada, Europe, Australia and Brazil, the MISTRAS Ropeworks team is uniquely positioned to be your partner for inspection and maintenance services worldwide.

## DEPTH OF EXPERIENCE

Ropeworks technicians have been engaged in rope access work since 1994 and wind energy services since 2003 - building experience with nearly every major utility-scale wind turbine manufacturer in the world.





## BLADE SERVICES

Wind turbine blades are routinely subjected to extreme operating conditions. Preventative inspection and maintenance of the rotor blades is essential for maximizing the return on investment of the asset. Even seemingly minor damage can lead initially to poor performance, subsequently to large repairs and even catastrophic failures.

Ropeworks' team of blade specialists perform scheduled maintenance and can be deployed quickly to respond to acute problems, such as damage caused by lightning. Our goal is to keep the blades spinning.

### BLADE INSPECTION

MISTRAS Ropeworks technicians provide a thorough assessment of the condition of the blade, its composite materials, and lightning protection systems. Our teams can identify potential issues, perform a root-cause analysis, and recommend

repairs. Inspections are performed using visual or advanced non-destructive testing methods. Findings are reported in a concise and useful format delivered electronically for efficient collaboration across departments.

### BLADE REPAIR AND MAINTENANCE

Building on nearly a decade of experience working with many of the major blade manufacturers, our blade specialists repair damages caused by leading edge erosion, bond-line failures, moisture intrusion, freeze/thaw cycling, transportation and lightning damage.

Ropeworks techs have developed innovative repair methods that prolong the life span and overall effectiveness of field repairs. Each repair is documented step-by-step for quality control purposes and to ensure adherence to work instructions.





## **TOWER SERVICES**

Ropeworks technicians provide cost-effective maintenance and repair services for wind turbine towers including:

- Internal and external inspection: visual & NDT
- Tower flange sealing
- Coating repair
- Inspection of landing bolts
- Bus bar service and retrofit

## NDT SERVICES AND ASSET MONITORING



### NDT SERVICES

Ropeworks technicians draw on MISTRAS' 40 years of experience as a leader in non-destructive testing (NDT) technology and services. Traditional and advanced NDT technology can be used to evaluate the integrity of steel, aluminum and composite materials as well as connections such as bolts and welds.

NDT inspection services for blades, towers and connections include ultrasonic, phased array, thermography and automated weld scanning.



### WIND TURBINE CONDITION MONITORING

Wind turbine owners and operators are increasingly interested in lowering asset downtime by increasing component reliability and predicting upcoming maintenance issues.

MISTRAS' monitoring solutions provide owners with fleet-wide visibility of the condition of turbine components including blades, towers, gear boxes, and transformers by incorporating advanced acoustic emission and vibration sensors tied into a central web-enabled database.



## A FEW OF THE INDUSTRIES SERVED BY MISTRAS ROPEWORKS



**OIL & GAS**



**WIND ENERGY**



**BRIDGE & HYDRO**



**ICONIC STRUCTURES**

**MISTRAS** is a leading “one-source” global provider of technology-enabled asset protection solutions used to evaluate the structural integrity of critical energy, industrial and public infrastructure. Ropeworks is a Center of Excellence (COE) within MISTRAS focused on rope access inspection and maintenance services.



195 Clarksville Road  
Princeton Junction, NJ 08550 USA  
[www.mistrasgroup.com](http://www.mistrasgroup.com)  
TEL: +1.609.716.4000

For MISTRAS office locations in  
Canada, Europe, South America and Asia  
please visit  
[www.mistrasgroup.com/locations](http://www.mistrasgroup.com/locations)



8587 White Fir St, Unit A2  
Reno, NV 89523 USA  
[ropeworks@mistrasgroup.com](mailto:ropeworks@mistrasgroup.com)  
[www.ropeworks.com](http://www.ropeworks.com)  
TEL: +1.775.747.2244  
Toll-free: +1.800.730.5622



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