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GRIDIN'S GROUP

OWF MAINTENANCE SERVICES

ISO 9001
ISO 14001
ISO 18001

We offer cost-effective solutions in project management and implementation, including training and selection of technical specialists based on customer requirements.

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ABOUT US

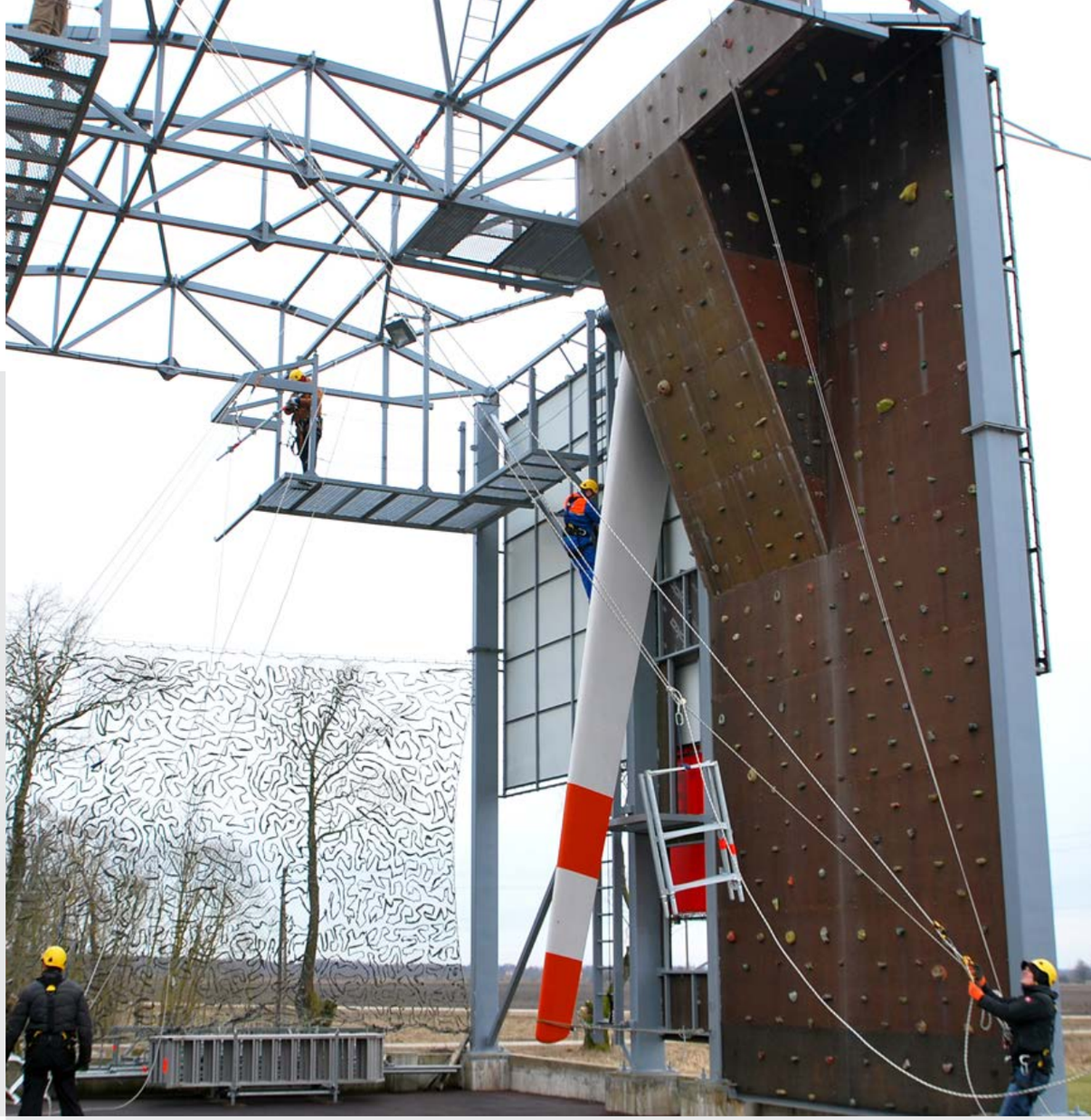
Gridin’s Group is an experienced supplier of the complete range of services for offshore Oil & Gas, Renewable and Nuclear energy, Marine, Industrial and Civil construction sectors.
In its activity Gridin's Group meets the following ISO standards:
ISO 9001:2008,
ISO 14001:2004,
BS OHSAS 18001:2007,
which represents the integrated management system. The main goal is to adhere to certain standards related to quality, HSE, and work performance.

Other certificates:
GWO
IRATA
VCA
ISO-IEC 17025:2005
DNV-GL

INTERNATIONAL TRAINING CENTER

Our International Training Center (ITC) offers more than 30 formal and informal training programs. Some of them are:

- Training of wind power plant personnel according to GWO standards;
- Training of rope access specialists according to IRATA standards;
- Wind power plant blade inspection and repair;
- Mobile communication antenna maintenance and installation specialists;
- Training of: scaffolders, specialists according to VCA standards, electrical equipment specialists, sandblasters, painters, metallic construction welders, pipe welders, pipefitters.







In 2006, the company launched a private educational center. Over time educational center acquired the status of an **International Training Center (ITC)** and bcame an in-demand center offering a wide range of training programs for either new or already experienced professionals wishing to obtain a new specialty or improve qualification.

In 2013, an area for training specialists for performing complex maintenance of wind farms was launched on the ITC base.

TRAINING ACCORDING TO GWO STANDARDS

The aim of GWO is to ensure safe work environment in the wind turbine industry. Training according to these standards guarantees a common, industry-wide practice, reducing any safety and health issues for the personnel working on onshore/offshore sites.





Gridins' Group International Training Center (ITC) is ofering LRQA approved training according to GWO standards. The following modules are organized in ITC in Klaipeda, Lithuania.

GWO modules:

- GWO Working at Height;
- GWO First Aid;
- GWO Manual Handling;
- GWO Fire Awareness.





COMPULSORY ADDITIONAL TRAINING

Before directly proceeding to work on a wind turbine generator, all wind farm maintenance specialists of **Gridin's Group** must undergo additional health protection and safety training in compliance with the requirements of wind farm owners or operating companies.









The training program includes the following courses:

- Introduction to wind turbine design;
- Additional instructing to avoid accidents during the work;
- Explanation of safety signs;
- Attachment points of equipment preventing falls from height, introduction to the devices;
- Causes of fire and evacuation methods;
- Interaction and rules of conduct for operating personnel;
- Methods and procedure for alerting rescue services;
- First aid treatment;
- Methods of moving around on the ladders and in the openings inside wind turbines. Accessing the gondola of wind turbines;
- Working with an elevator and evacuation plan in case of its failure;
- Evacuation of an injured person inside wind turbines.

INSPECTION OF ELECTRIC EQUIPMENT

Apart from the main speciality, the electric technology personnel of **Gridin's Group** is trained to perform works by rope access method, which enables them to inspect and maintain the entire electrical part of the wind farm in the shortest time possible.





Inspection works performed:

- Diagnostics of vibration sensors;
- Diagnostics of lightning protection system;
- Diagnostics of inverter and transformer cooling systems;
- Weather stations monitoring;
- Elevators monitoring;
- Monitoring of control and power cable routes between gondola and inverter/transformer;
- Monitoring of ventilation systems;
- Monitoring of power cable connections;
- Measuring the network parameters of the output voltage;
- Functional circuit breakers' verification;
- Installation of cable connections on bus rings.

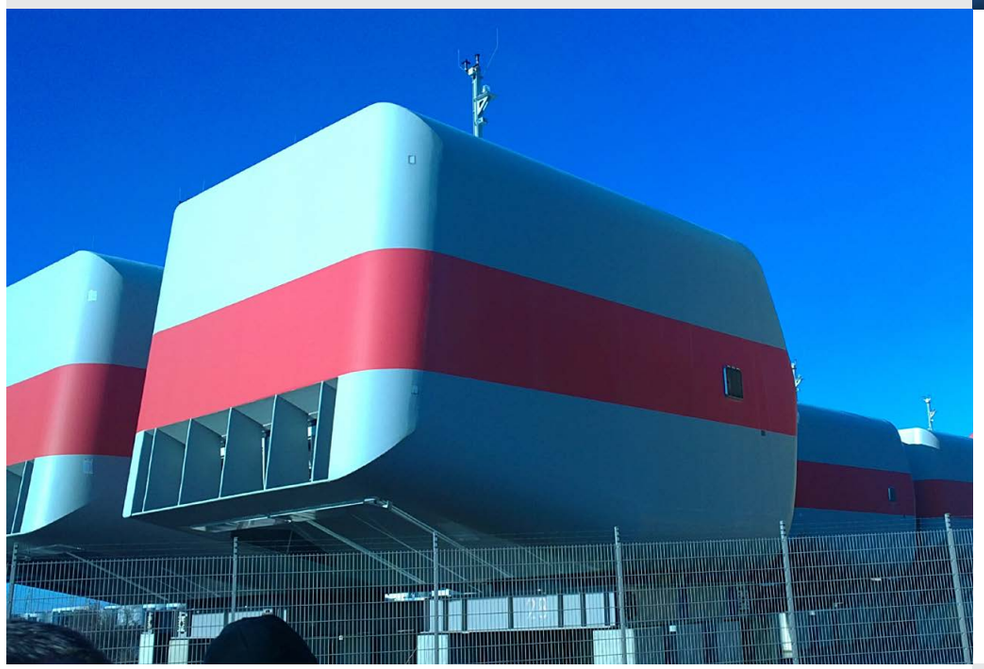
MAINTENANCE OF ELECTRIC EQUIPMENT

Performing maintenance/adjustment of:

- Main bearings' sensors;
- Diagnostics and calibration of rotor rotation speed meter;
- Magnetic meter of the high speed rotor shaft;
- Replacing wear scanners;
- Installation/replacement of XY slope sensors;
- Programming smooth activation devices;







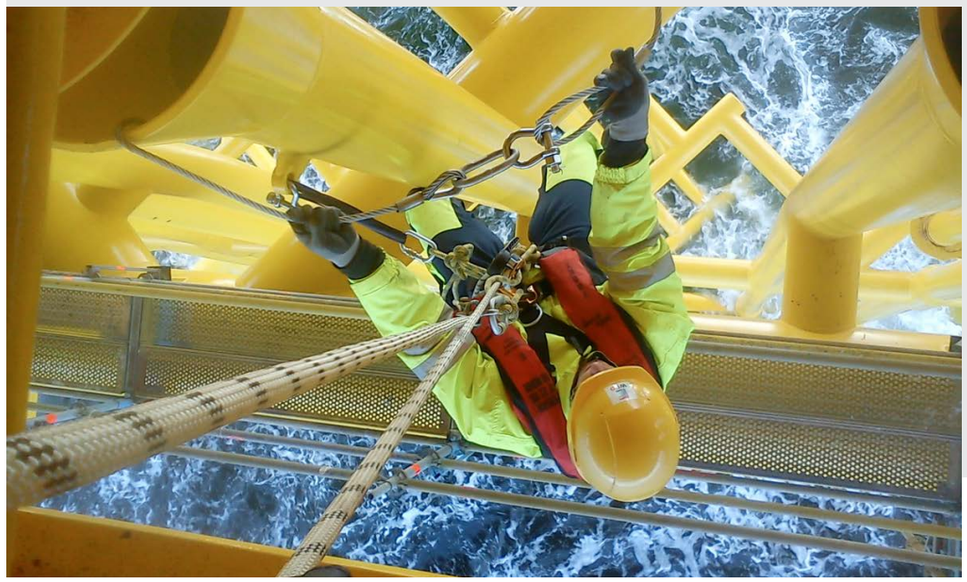
- Generators' alignment;
- Power and switch boards;
- End switches;
- GPS and navigation lighting system;
- Telephone communication;
- Lighting systems inside the tower and the hub;
- Of emergency lighting systems.

RIGGING AND ASSEMBLY WORKS

Rigging works carried out by rope access technicians include a wide range of technological operations necessary for the transfer of heavy and large-sized objects. Unlike standard loading and unloading operations, rigging works are not possible without using special devices and mechanisms intended for safe transfer of various cargo.

Operations related to assembly/disassembly of various types of nodes, mechanisms and elements of structures are carried out using rope access method. During these works, special attention is paid to complying with all necessary safety requirements.





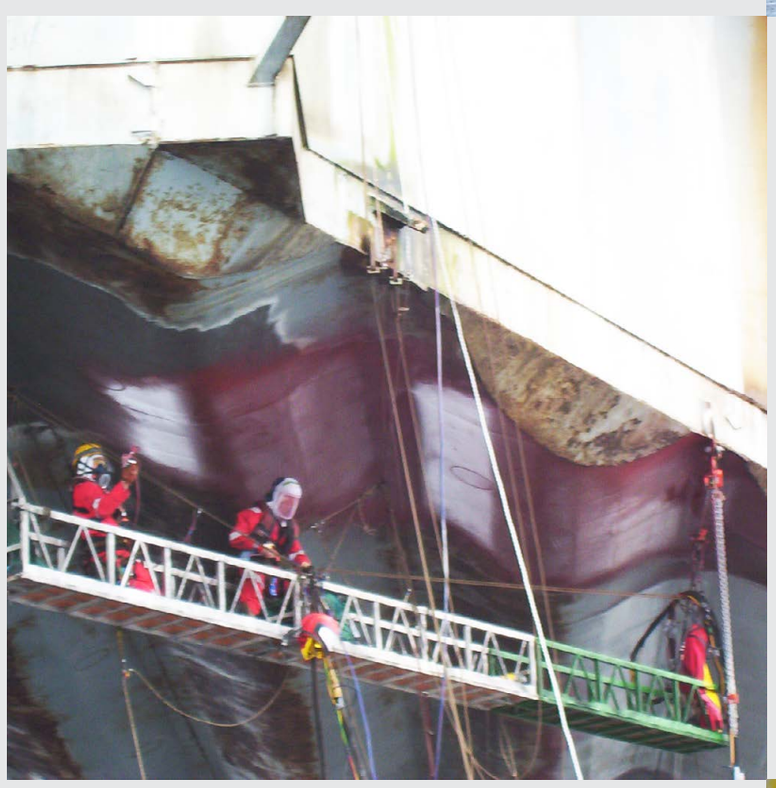


SURFACE TREATMENT

The specialists of **Gridin's Group** have extensive experience in working with various anti-corrosion systems, used for protecting both metallic and composite surfaces.







Depending on the requirements provided by the painting specifications, the following works are performed:

- High pressure washing;
- Mechanical cleaning;
- Abrasive cleaning;
- Sandblasting;
- Painting by all types of paint and varnish materials (including sleet proof and hot-lay materials):
  - Polyurethane;
  - Epoxy;
  - Alkyd;
- Metalization;
- Paintwork with fire retardant paints.



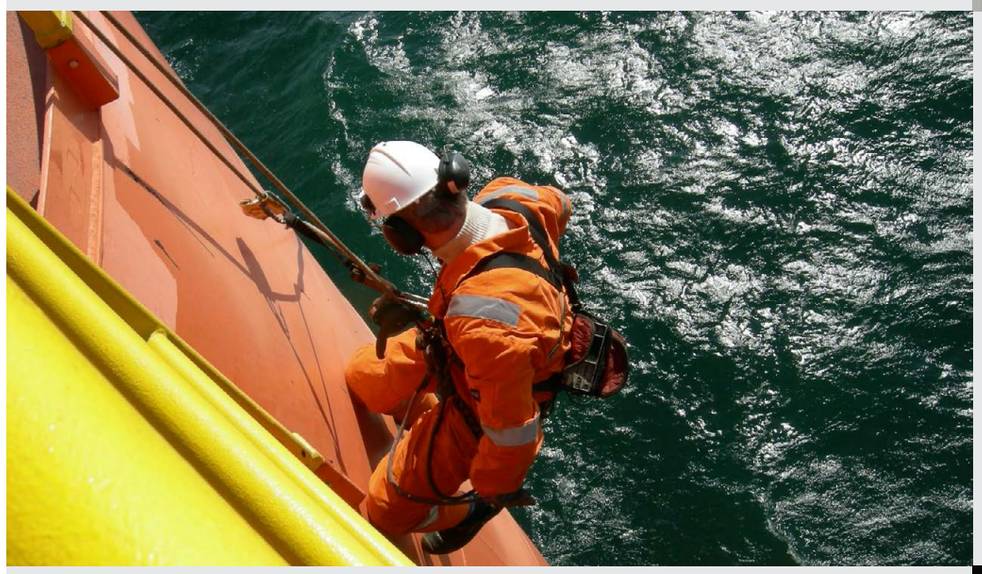


WIND GENERATOR INSPECTION



Preoperational and regular operational inspection of wind generator elements includes a complex of operations.

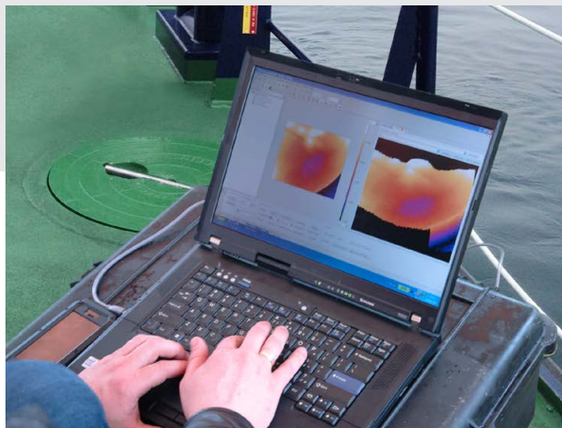
Using a system of different inspection methods and analysis ensures the earliest possible detection of any departure from the norm and different defects. This allows to avoid potential damage and shorten the idle time of the wind power turbine.



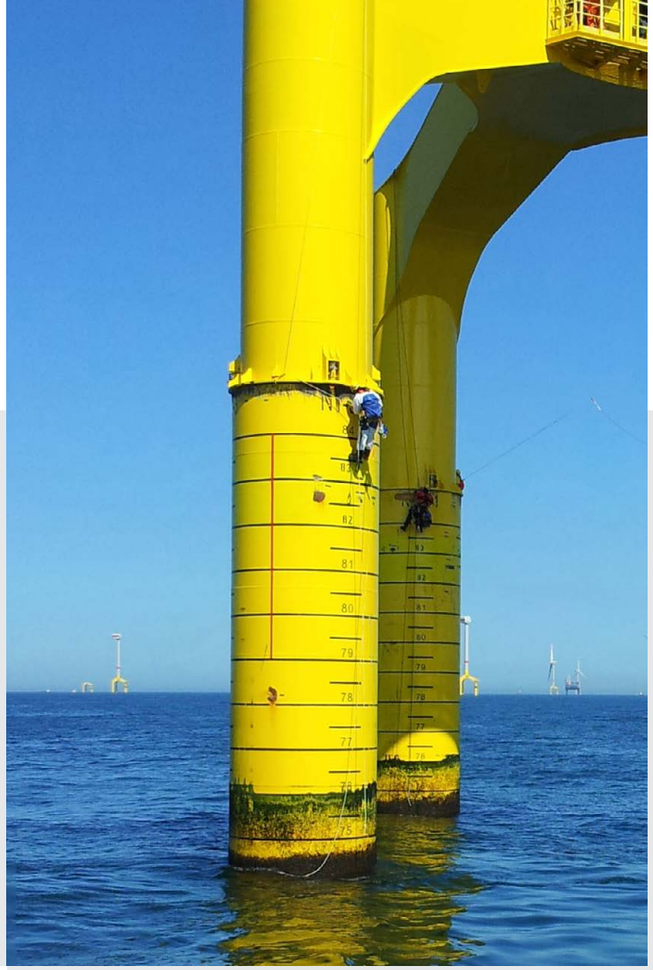
Inspection methods:

- Visual testing (VT);
- Dye penetrant testing (PT);
- Ultrasonic testing:
  - Manual UT and UTM method;
  - Automatic P-scan and T-scan method;
- Thermovision.





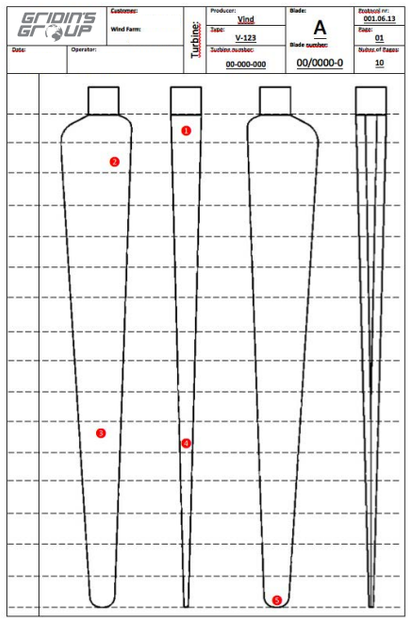
INSPECTION OF ROTOR BLADES/TOWERS





Gridin's Group provides inspection services for rotor blades and wind towers.
Our specialists have developed a technology for the application of the thermovision method for detecting defects in the structure of wind turbine blades.
Technicians compile inspection protocol depending on the scope and complexity of the object.





The report includes:

- Schematic drawing of the blade with the location of detected defects specified;
- Detailed description of individual defects with the dimensions (level) of faults specified;
- Detailed description of fault types and the nature of defects;
- Photo and video material;
- Analysis of defects and recommendations for their elimination.





REPAIR OF ROTOR BLADES/TOWERS



Gridin's Group provides repair services for rotor blades and wind towers.

By analyzing the results of the inspection report, the specialists of our company prepare recommendations and develop repair technology for the detected faults. Whilst developing repair technology, high attention is given to the kind and nature of the faults as well as the acceptability of the defects.



Blade repair is carried out by specialists who have completed special training for working with composite materials (fiberglass and epoxy resin). To accelerate the repair process as well as to achieve the maximum quality of blade repair, the UV curing system is applied.

After completing repair works on the structure, its paint coat is necessarily restored.





ROPE ACCESS

Gridin's Group Rope Access department, established in 1999, is a full member of **IRATA** (International Rope Access Trade Association).

Our company can provide specialists to perform work of any complexity, both onshore and offshore.

All technicians have permissions and International certificates for rope access work.



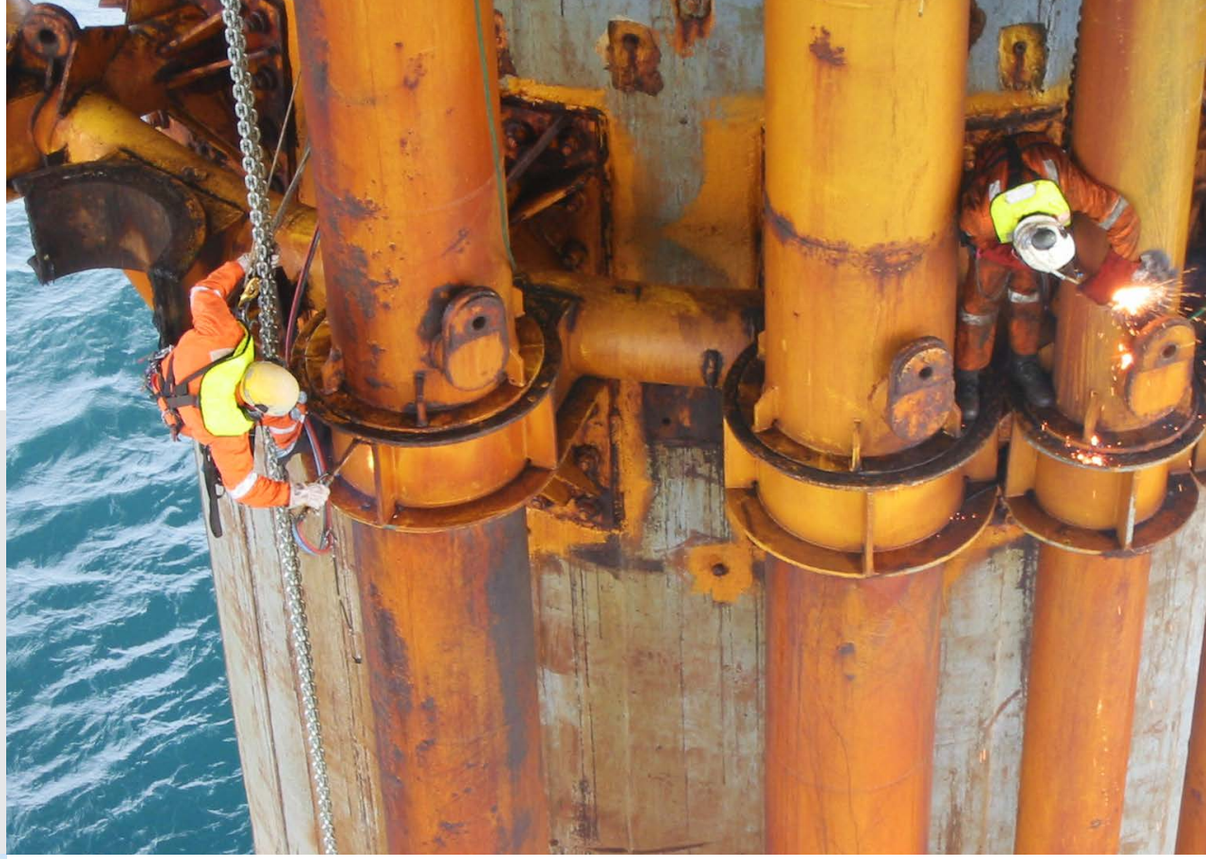




Our rope access technicians have various industrial professions, such as:

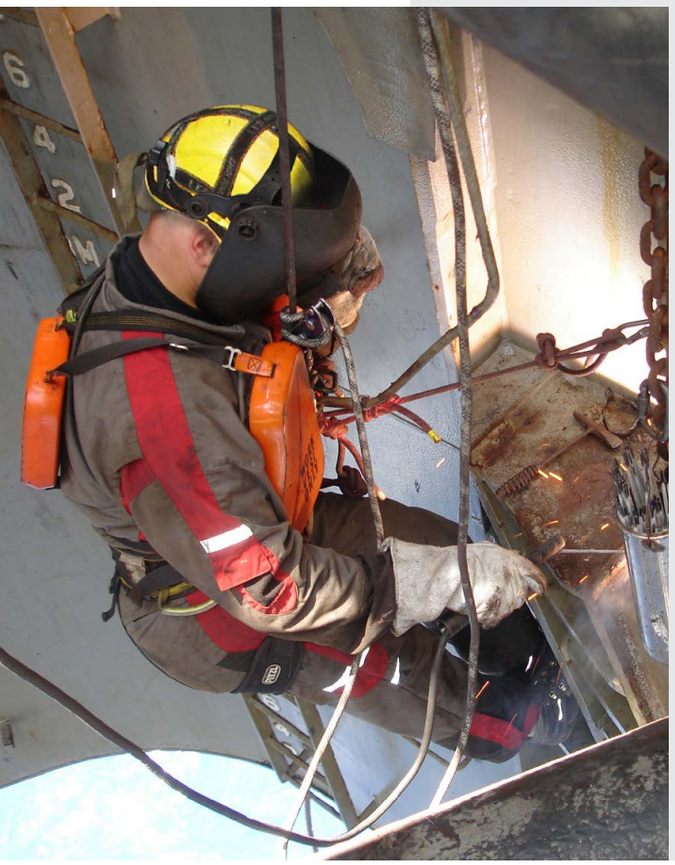
- steel fitter,
- welder,
- sandblaster,
- painter,
- electrician,
- fitter,
- mechanic,
- rigger,
- NDT operator and others.

REPAIR/REPLACEMENT OF STEEL STRUCTURES



Complex technical maintenance teams for wind farms must include specialists in the area of repairing wind power generators' secondary metal structures.

We perform various repair and replacement works. Some of them are:





- Replacement of broken jetting pipes and deep well pumps. Positioning of jetting lines and replacement of pipe supports.
- Steel renewal of platform legs;
- Repair of lower guides, mounting bottom guides of platform legs.
- Corrosion protection of steel structures.

Our specialists are experts in various welding processes:

136 – semiautomatic welding using flux-cored wire & active gas;

135 – semiautomatic welding using stranded wire and active gas;

138/136 – series welding with reverse formation performed by the combined method;

111 – manual electrode arc welding;

141 – tungsten inert gas welding (argon).

PROJECT REFERENCES



United Kingdom

- RACE BANK – offshore welding works for Jacket/Topside connection, offshore installation of Hinged stairs to Jacket
- WALNEY 3 - welding works for Jacket/Topside connection
- BURBO BANK - top side installation works - welding. Touch up painting using rope access method

The Netherlands

- PRINCESS AMALIA - IRATA L3 supervisor support during the inspection works

Germany

- AMRUMBANK WEST - drainage system installation, touch up painting using rope access
- GODE WIND - touch up painting works at 2 substations, using rope access methods. Transformer rooms cleaning works
- TRIANEL - rope access woks
- BUTENDIEK - rectification campaign, inspection works after the TP's repair using rope access method, preparation of the inspection report
- NORDSEE 1 - Repair of the damaged paint areas using rope access, surface treatment
- BARD OFFSHORE 1 - Electrical and rope access works, Borkum island, North Sea
- VEJA MATE - welding works for Jacket/Topside connection, touch up painting of the damaged areas after the installation works using rope access method

Belgium

- THORNTONBANK - touch up painting, repair of the damaged surface areas / rope access







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