DESIGN ASSESSMENT OF WIND TURBINE TOWERS

BUSINESS CHALLENGE

Tower structural integrity is one of the more important aspects to be considered in wind turbine design. Product development teams must ask and answer essential questions such as “Will wind turbine tower last for the design life under daily use?” For the manufacturers of wind turbine towers, the certification by an International Recognised Certification Body is a must and, depending on the country, it is a mandatory requirement.

BENEFITS FOR YOUR BUSINESS

Confidence in your design - Design evaluation certificate confirms that the wind turbine tower is design and documented in conformity with design assumptions, specific standards and other technical requirements, improving confidence of all stakeholders in the safety and stability of the tower.

International recognition - Bureau Veritas Certification France is accredited for the certification of wind turbine towers under COFRAC, N° 5-0051, for both IEC 61400 and GL guidelines certification schemes. This ensures that your certificate will be recognized by your clients and other certification bodies worldwide.

OUR APPROACH

Wind turbine tower analyses are performed by expert engineers with a strong technical expertise in wind. For each certification project, Bureau Veritas Certification France sets a project organization with a multidisciplinary background: design review, independent analyses, material expertise, and more.

Process: The certification process verifies all the tower elements taking part in the structural design:
- Standards applied;
- Materials;
- Load calculations;
- Calculation notes:
  - Buckling;
  - Ultimate resistance;
  - Fatigue calculations;
  - Door openings;
  - Bolted connections;
  - Eigen frequency; etc.

In addition, Bureau Veritas Certification France has developed an innovative tool to perform independent analyses on wind turbine towers according to IEC 61400-1 and Eurocodes.
SKILLS AND TOOLS

We bring decades of experience to complete your structural wind turbine challenges. Our services are delivered by highly qualified and trained engineers performing calculations with the most appropriate and reliable software such as LMS Samtech Samcef Wind Turbines, Abaqus, ANSYS and more.

A specific software to calculate steel wind turbine towers has been developed by Bureau Veritas Certification engineers. Calculations are performed taking into account material characteristics, wind loads, bolted connections and all structural elements constituting wind turbine tower. The engineering team can simulate all structural aspects of the tower – conducting linear static analyses that reveal stresses, durability based on fatigue calculations and modal analysis.

WHY CHOOSE BUREAU VERITAS

Reputation - Created in 1828, Bureau Veritas is a global leader in Testing, Inspection and Certification, delivering high quality services to help clients meet the growing challenges of quality, safety, environmental protection and social responsibility.

Knowledge and expertise - Certifications are performed by qualified experts with a strong experience in composite materials and rotor blade structures, operating under a controlled quality system. Bureau Veritas Certification France’s expertise is acknowledged by the COFRAC accreditation.

Global network - With more than 63,000 employees in 1,330 offices and laboratories covering 140 countries, Bureau Veritas is able to act quickly on its clients’ behalf anywhere in the world. Our inspectors will always be close to your factories, allowing for a greater reactivity and reduced transportation costs.

Customer focus - Bureau Veritas’ core values include integrity and ethics, impartial counsel and validation, customer focus and safety at work. As a trusted partner, Bureau Veritas offers innovative solutions that go beyond simple compliance with regulations and standards, reducing risk, improving performance and promoting sustainable development.

FOR FURTHER INFORMATION ON OUR RANGE OF SERVICES PLEASE CONTACT:

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