

Global manufacturers Cooper & Turner, who have established operations in the UK, China and USA, have been a vital part of the renewable energy industry for over two decades, producing bolts and fixings for the entire wind turbine structure. This includes towers in some remote and challenging environments, such as offshore wind farms.



“We started servicing the wind turbine market more than 25 years ago, long before it became an integral part of the global energy supply,” says David Briggs, Head of Global Quality and Technical Information at the Cooper and Turner Group.

“The manufacture and provision of high quality, safety-critical fasteners, with the ability to operate in some of the most hostile environments in the world, has gained us an unrivalled reputation in the wind turbine marketplace.”

Quality control and safety is where Tinius Olsen has been an integral part of the production process. Cooper & Turner have been using a Tinius Olsen Super L Universal Testing Machine for over 10 years, and it has proved to be one of the most reliable machines within the production process.

“The Tinius Olsen Super L is utilised multiple times per day, with its maximum capacity of 3000kN ensuring the testing of each of our safety-critical fasteners meet all international standards and beyond.”

“We currently supply to all aspects of wind turbine construction including Foundation, Tower Construction, Blade to Hub, Nacelles and Off-shore Transition Pieces. All have their specific tolerances due to the different stresses generated by the motion dynamics throughout the structure.”

With this in mind, all steel is purchased to Cooper & Turner’s own internal specifications, which have been developed over the years to ensure the right tensile strength while still maintaining good ductility. Because these products are used for both onshore and offshore turbines, they must also be extremely robust.

“Bolts have diameters ranging from M16 right up to M80, are generally made of alloy steel, and are heat treated to meet the mechanical properties of ISO898-1 property class 8.8 and 10.9.

“Most fasteners within a turbine are installed by Torque so we have to ensure the product we supply hits the target preload and a determined Torque. The Tinius Olsen machine is capable of applying a torque of 60,000Nm and measuring loads of up to 5000kN.”

The company have their own in-house testing facility, specialising in destructive and non-destructive metal testing and are one of the few within the industry capable of testing large bolts full size.

Other in-house testing includes salt spray testing, tensile testing, as well as Charpy, Rockwell and Micro hardness.

“Over the last 10 years the Tinius Olsen Super L has enabled us to stand out from our peers. Our customers are able to relax knowing that because of this excellent machine, we are able to test our critical products to the maximum safety requirements.”

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