

Safer lifting using quality products



With renewable energy a constantly advancing market, the need for more efficient wind farms and larger structures is also growing. The result is the next generation of wind turbine installations, weighing thousands of tonnes each. But how can these be transported from the production line to site safely while ensuring often very tight deadlines are met?

Worldwide there are several monopile manufacturers needing to move their complete monopiles and segments from their dock onto ships, ready to leave for transport by sea. Moving these enormous steel tubes requires engineered lifts, which ensure the safety of both the payload and the crew.

Nowadays, monopiles have very large dimensions, with diameters of around 11 metres, lengths around 90 metres and weights of up to 2.400 tonnes for just a single piece. A major challenge regarding the size and weight of the monopiles and segments is handling them in a safe and controlled manner.

Moreover, manufacturers of monopiles are mostly facing tight deadlines, which requires an effective lifting configuration. As manufacturers can produce dozens of monopiles a year, this requires lifting equipment with a long life span and that is appropriate for varying and unpredictable



Easy to handle

The light weight Extreema round slings make it easier for the crew to place the slings in the accurate position around the monopile, without using additional specialist equipment and without damaging the monopile or segment. This ease also lightens the load on the workers on site. This substantially advances the process, as slings need to be positioned precisely according to the lifting plan in order to ensure a safe and effective lift.

A sustainable choice

Safety on site is of course the most critical factor for lifting gigantic monopiles, but making more sustainable choices is another important goal for many companies worldwide. Especially so when handling the next generation of wind turbine installations.

Extreema has sustainability benefits as not only does the product range have a longer service life, it also has the lowest carbon footprint per unit strength, since it is produced with bio-based Dyneema. This enables the end-user of the products to reduce their carbon footprint, while maintaining the same trusted performance. Subsequently, customers downstream can also reduce their carbon footprint.

Strong and proven track record

By constantly analysing the needs of monopile manufacturers worldwide, Lift-TEX has been able to develop a product range of synthetic heavy lift round slings that overcomes challenges for monopile manufacturers in regards to weight, size, safety and sustainability. In this way it has become a leading brand in the heavy lift industry over the past decade, and has been able to build a strong and proven track record in the offshore wind industry.

Lift-TEX industry b.v. has been integrated in the project planning, engineering, transportation and installation of offshore wind farms around the world and has built lasting relationships with contractors through a strong and reliable distributor network.

Offshore wind projects

For a spectacular heavy lift project in 2020, where giant monopiles for an offshore wind farm were transported, Extreema heavy lift slings were the perfect fit. Within one year, the transportation of 40 monopiles and 120 sections was completed. The endless loop construction, encased in a compact and strong woven jacket, enabled the slings to be manufactured with very low elongation under load, exact length tolerances and high lifting capacities.

The heavy lift soft slings have also been used for a project at the SteelWind Norderham factory. This project consists of 27 turbines and one offshore substation,

weather conditions.

For lifting projects of these kinds of scopes, the most important factor is the connection between the crane hook and the monopile.

Relying on synthetic lifting slings

Lifting dozens of complete monopiles and segments a year means relying on high quality heavy lift slings, which connect the crane hook to the payload. Lift-TEX Industrie b.v., based in The Netherlands, specialises in the production and development of synthetic heavy lift soft slings and protective sleeves. The company's products have been widely used in a whole raft of lifting projects, both onshore and offshore.

Extreema round slings, made with bio-based Dyneema, have a high, consistent quality and a significant long life span. Additionally, the slings are very lightweight, at about one third of the weight and half the diameter of a polyester round sling.

This makes them suitable for tackling the transport challenges of monopile manufacturers. They save a lot of time and energy in terms of handling for riggers on site. They are a better fit for the related equipment and less weight is added to the crane's payload relative to conventional lifting material such as steel grommets, which are eight times heavier than Extreema heavy lift round slings, keeping total rigging weight low.



requiring 28 monopiles in total. The substation monopile, which is one of the first to be transported, weighs just over 2,100 tonnes, has a length of 110 metres and a diameter of 9,60 metres, making it one of the biggest monopiles in offshore wind history and the biggest in Europe.

First load-out

The first impressive load-out for this project was successfully performed in February 2022. It was an incredible view to see how the monopiles slowly made their way from the dock onto the ship, laying precisely in the heavy lift round slings, as determined in the engineered lifting plan.

For this project Lift-Tex Industrie b.v. manufactured heavy lift round slings with a minimum breaking load of 4,028 tonnes and an effective working length of 54.60 metres. The exact length tolerances are a crucial element for projects like these. Due to the state-of-the-art machinery, technical know-how and high quality raw material, Lift-Tex was able to guarantee these length tolerances and low elongation. Furthermore, Extreema synthetic round slings have less stretch, which is very important under these conditions, where precision positioning is required.

Results

After many years of research, testing and a strong and proven track record in the heavy lift industry, Lift-Tex Industrie b.v. supports clients and customers worldwide by creating

a safer and more efficient working environment for the team on site and simultaneously saving costs, time and contributing to a greener future.

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