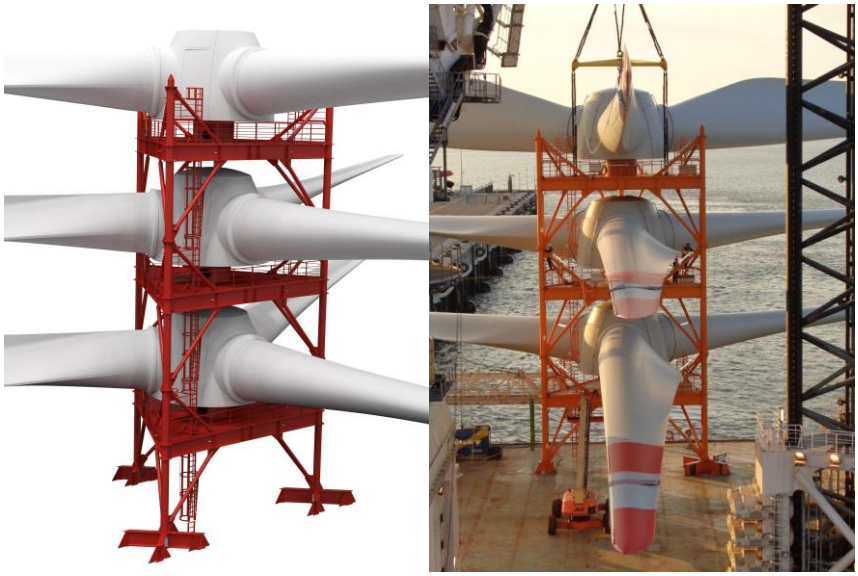
Optimized seafastening design by Vuyk

Cost reduction in the offshore wind has been one of the hot topics to meet tender demands over the last years and will continue to be an important driver in the future. Excessive costs remains an existential threat to realising the potential of offshore wind. Especially the increase of project volumes and the increasing pressure on balance of plant.

According to Vuyk Engineering Rotterdam, a potential cost saver can be found in the transport of the wind turbine components and foundations. More specifically an advantage can be found in the reduction of steel weight for the seafastenings. The, often heavy, project specific seafastenings are required as an interface between the vessel and cargo. Apart from the fact that low weight seafastening will be cheaper since the capital investment required for the amount of steel is reduced, additional benefits can be identified.



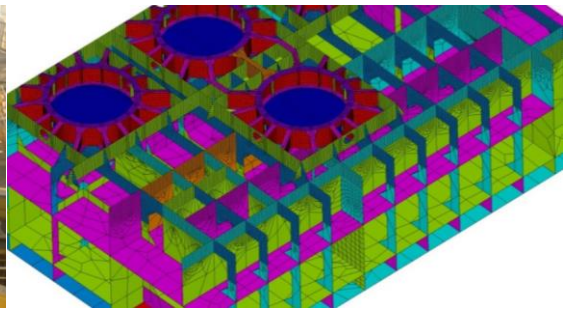
Taking a closer look into seafastenings on self-elevating platforms it can be seen that a weight reduction can lead to a significant operational advantage. Lighter seafastening will require less deck space resulting in more room for paid cargo. Subsequently the jack-up vessel can transport more payload. In case the weight savings are translated to additional consumables, a higher autonomy can be obtained resulting in fewer round trips.

On the other hand, there is an end to weight reduction, not only from structural point of view. Light weight may not be the cheapest because it is often more complex which may increase fabrication costs and the probability of errors in fabrication or mobilization. Furthermore, it may be less robust which is required to accommodate surprises during fabrication, mobilisation and operations. At last, low weight seafastening may not be re-useable.

One of the key value drivers that is used at Vuyk during seafastening design is low mobilisation time. The reduction of vessel time will directly lead to a reduction in costs. Installation of seafastening is one of the main drivers during the mobilisation phase of the project. The seafastening design may also affect

the number of lifts and obviously the required lifting capacity. A low weight design may result in more mobilisation time due to a higher level of integration in the vessel.

To be able to realise the optimum solution, Vuyk employees use their vast experience of not only support and seafastening design but also experience in marine operations, motion analysis and ship design. Vuyk engineering has a broad knowledge in specialised designs for heavy weight component seafastening in close cooperation with the customer.

Above pictures shows the optimized grillage design in finite element modelling (FEM).

Vuyk offers a fully integrated design portfolio; vessel design, marine operations and equipment design for conversion, new builds or consultancy. This wide range of expertise in various markets is possible because of the knowledge and skills of the highly experienced and passionate engineers, who find their challenge in safe and functional solutions. The many years of experience of the Vuyk engineers is exceptional in the maritime engineering market.

Vuyk will keep striving to reduce costs in the offshore wind, contact us now to discuss the opportunities.