



## LANKHORST ENGINEERED PRODUCTS

### Innovative plastic sleepers for light rail network city of Amsterdam

The recessed version of the KLP® Hybrid Plastic Sleeper is one of the innovations developed and produced by Lankhorst Engineered Products. High demands are placed on sustainability, lower Life Cycle Costs and high resistance to lateral forces. The hybrid plastic sleeper also achieves considerable sound reduction in addition to the long service life and substantial weight savings. For these reasons the City of Amsterdam has chosen the plastic sleepers of Lankhorst for the replacement of the light rail infrastructure on the section of the Madeweg - Overamstel.

As of July 28th this year GVB (municipal transport company) has been working on the replacement of the light rail infrastructure in this section. Lankhorst has supplied 1,800 KLP® Hybrid Plastic Sleepers for two fly-overs which will guarantee the stability of the

track, also at high loads. The section is already successfully in service.

*"With regard to maintenance projects we aim for sustainable replacement and cost-efficiency every time"* says Bauke Hoogzaad of the City

of Amsterdam to clarify their choice of the plastic sleeper. *"Wooden sleepers last for a maximum of 15 years, whilst the life expectancy of plastic sleepers is at least 50 years."* Besides that the plastic sleeper is fully recyclable after use. The new KLP® Hybrid Plastic Sleeper is a sustainable alternative to wooden and concrete sleepers, especially when these are too heavy for the underlying construction, which was the case with the two fly-overs in Amsterdam.

The innovative plastic sleeper has great lateral resistance due to the special relief on the bottom and it has a recessed design to be completely surrounded by ballast. This makes the construction "solid as a rock" and ideal for use in places where large lateral pressure is exerted on the track or where the vertical load on civil works is subject to a maximum (e.g. bridges, viaducts or fly-overs). The infrastructure of the



**KLP® Hybrid Plastic Sleeper**

two fly-overs has been installed with a tight curve radius. Passing subway trains run at high speed through this relatively sharp curve, leading to very high lateral forces on the rail.

Using these plastic sleepers results in considerable sound reduction. Sound measurements performed on recently completed bridges show a reduction of 3-5 dB! Additionally the high sound peak in the frequency range of hearing has also been drastically reduced; this means an extra reduction of noise pollution. The strength and dimensional stability of the hybrid plastic sleeper makes it fit for use in all (weather) conditions. KLP® Hybrid Plastic Sleepers can be processed in the same way as wooden sleepers.

Lankhorst Engineered Products presented the hybrid sleeper from recycled plastics to the railway industry early 2009; a European debut. Since then, they have supplied various types of this product to several projects in the Netherlands, France and Sweden. KLP® Hybrid Plastic Sleepers are available in various designs, including main track sleepers, bridge sleepers and switch sleepers.



**KLP® Hybrid Plastic Sleeper**



**WireCo®**  
WorldGroup



# LANKHORST ROPES



## Goliat FPSO Mooring Lines Installed

Lankhorst Ropes Offshore has monitored the installation of the mooring ropes for the Goliat FPSO (Floating Production Storage and Offloading) for Eni Norge AS, positioned 85 km offshore Norway, North West of Hammerfest in the PL229 and PL229B licence areas in the Barents Sea.

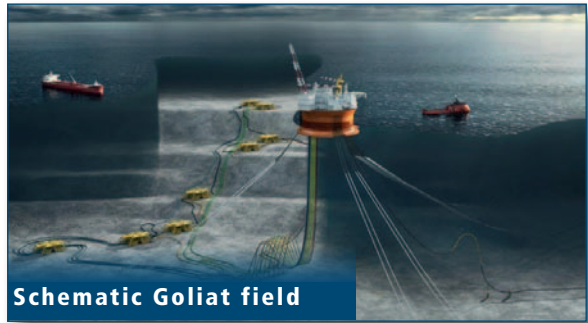
Given the weather conditions in the Barents Sea and the relatively shallow water depth, the cylindrically shaped Goliat FPSO uses a semi-taut leg mooring system to limit movement of the vessel. The mooring system comprises 14 Gama98 polyester mooring lines configured in three clusters of 4, 4 and 6 lines at 400 m (1,312 ft) water depth. Two clusters have longer mooring lines due to the prevailing weather. These, together with the sea bed chain, will provide the lateral restoring force needed to keep the production vessel

held on to the station.

In order to minimise the potential damage of trawl wire impact, Lankhorst Ropes has developed a trawler wire resistant rope jacket for the polyester rope lines. The FPSO's mooring system also features in-line buoyancy elements, manufactured by Lankhorst Mouldings. The buoyancy elements secured on elongated shackles have an uplift of 19 t, preventing the mooring lines from touching the seabed.



Dockwise Vanguard transports the Goliat to its field



Schematic Goliat field



WHERE OFFSHORE MEETS MARITIME



## Dockwise Vanguard uses Lankhorst ropes to load FPSO

Leading heavy lift and transportation firm Dockwise, a subsidiary of Boskalis, recently used Lankhorst Ropes' Strongline as part of the operation to load the 246m FPSO Armada Intrepid onto the Dockwise Vanguard. With approximately 60,000 tonnes (42,000 tonnes excluding ballast), the Armada Intrepid is the largest load ever undertaken in the Port of Rotterdam and one of the largest cargos ever transported.

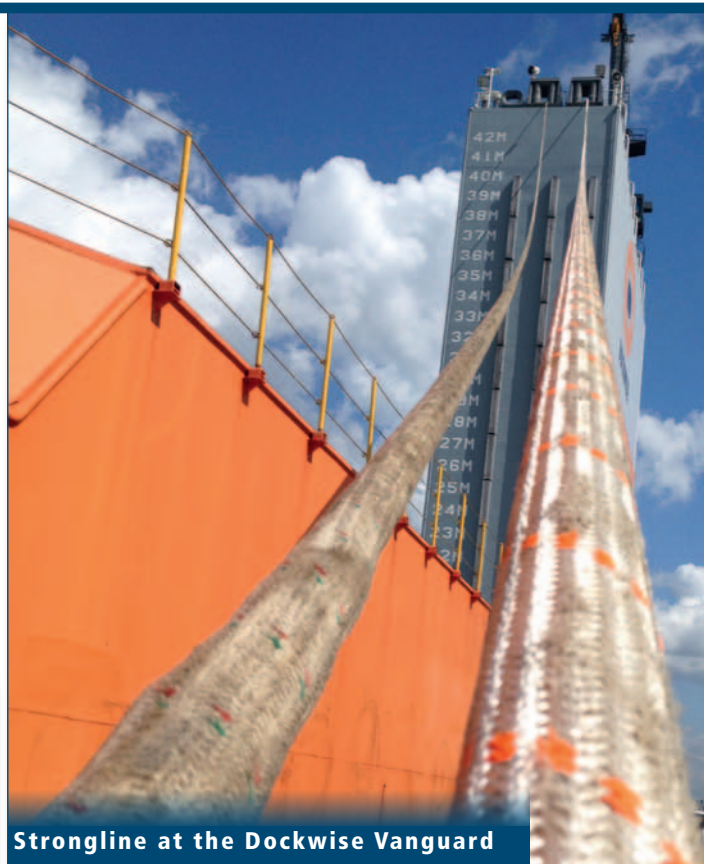
The Dockwise Vanguard used four of Lankhorst's Strongline ropes to position and manoeuvre the FPSO onto the vessel's deck during loading. Ideal for towing and mooring, Strongline features a parallel core construction with

braided cover. The protective cover provides excellent abrasion resistance, ensuring an extended service life.

Hans-Pieter Baaij, Lankhorst Ropes' commercial manager, commented on the loading



Dockwise Vanguard



Strongline at the Dockwise Vanguard

operation: "Lankhorst Ropes is dedicated to producing innovative ropes ideally suited for the most challenging projects. Loading FPSO Armada Intrepid on to the Dockwise Vanguard was an extremely precise

operation. Due to the size of the load, a rope with a good strength to diameter ratio was required, preventing the rope from burying itself on the winch and impeding loading."

## Lankhorst announces Deepwater Tethers Norwegian Sales Agency Agreement

Lankhorst Ropes has appointed lifting company W. Giertsen Services AS as sales agent in Norway. Under the agreement, Giertsen Services will offer Lankhorst synthetic fibre tethers for mooring flexible risers, umbilicals, cables and mid water arches (MWA) systems.

W. Giertsen Services is a leading provider of lifting equipment to the Norwegian continental shelf. It offers a complete lifting systems service, including lifting equipment, consultancy, specifications, engineering, fabrication, construction and technical services according to customer demand. In addition to standard lifting products, the company also offers custom handling systems.

Lankhorst tethers are made from high modulus polyethylene (HMPE) rope using

a Gama98® or Lanko@Force construction to provide the strength and mechanical performance expected of these long-term tethers. Each tether is customised for the subsea application and includes a protective jacket and polyurethane coating, together with ROV handling points for ease of installation and maximum service life.

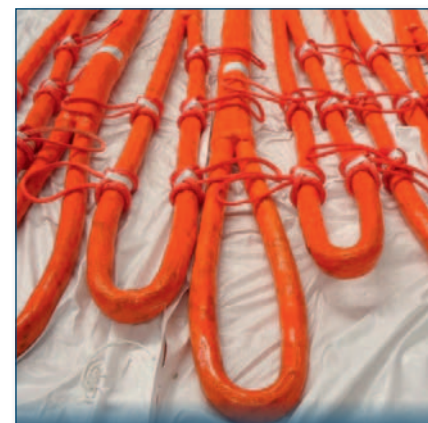
The fibre tethers are manufactured at the deep-water rope production facility at Lankhorst Euronete Portugal

SA. In addition to industry leading, rope manufacture and test facilities, the company's rope engineering team is able to provide comprehensive technical support at every stage of tether production.

Sérgio Leite, sales director heavy lift, Lankhorst Ropes Offshore: "W. Giertsen Services has the experience, and technical expertise, in offshore applications that we were looking for. With this agreement we look forward to working with Giertsen Services to develop the market for fibre tethers offshore Norway."

"Lankhorst fibre tethers is an important addition to our growing range of custom handling systems," commented Mr. Øystein Larsen, VP sales & technical support, W. Giertsen Services AS. "Lankhorst

has an excellent reputation for fibre rope deployments in demanding offshore applications and is a good fit with our own in-house expertise in handling systems."



Lankhorst Ropes high performance fibre tethers for flexible risers, umbilicals, cables and mid water arches (MWA) systems

## LANKHORST EURONETE PORTUGAL



### Tuna netting for "Playa de Azkorri"

The WireCo Fishing Division is extremely proud of the fact that it is now starting to prepare the second Tuna Net dispatch.

This Tuna Net was again built in-house in our Maia premises with our best quality spun dyed black nylon twines and netting. This netting is going to be shipped in five containers, with a total weight of almost 80 tonnes.

It will be performing on "Playa de Azkorri", a vessel that belongs to PEVASA – Pesquera Vasco Montañesa, SA, one of the most important tuna companies based in Bermeo, Spain.

PEVASA also owns the "Playa de Ris", the first tuna vessel fishing with a complete tuna net built by the Euronete team.

This net was supplied in 2014 and, so far, the performance has been excellent. We are told

that the netting has been in the 'Atlantic Ocean most catcher top 3' this year. We offer our technical support to make sure that the materials are in perfect condition. This, after sales support, is in fact one of the factors that distinguishes us from other suppliers.

The vessel "Playa de Azkorri" was built in the year 2009. It is a 87mts vessel with a freezing capacity of 2548 tons.

The netting was again built based on the design developed by our colleagues from Le Drezen.

Based on the experience with the first net supplied to this company, we have

discussed and proposed several improvements that, in our view, could be applied to this new netting. Our aim is always to achieve a better performance, better fishing and of course a longer life time for the profit of our good customers. For that, and with the experience and knowledge we have regarding the different products, we always innovate with the aim to achieve better performances.

We will soon present new bunts to the market that are made out of our knotless netting. This will in future distinguish Euronete from all its competitors.



Tuna net for PEVASA



Tuna net dispatch

## EXHIBITIONS 2015

### LANKHORST ROPES

9 – 12 November ADIPEC, Abu Dhabi

1 – 3 December International Workboat Show New Orleans (USA)

### LANKHORST ENGINEERED PRODUCTS

3 – 5 November Deepwater Operations, Galveston (USA)

3 – 6 November Blech Expo, Stuttgart

9 – 12 November Metalform / Fabtech, Chicago (USA)

9 – 12 November ADIPEC, Abu Dhabi



Lankhorst Euronete Portugal at the Danfish exhibition

## FROM THE EDITORS

The next edition of Lankhorst Euronete News will be published in February 2016.

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