



LANKHORST ENGINEERED PRODUCTS

Lankhorst wins tender to supply polymer sleepers to KiwiRail New Zealand

Lankhorst Engineered Products, manufacturer of KLP® Hybrid Polymer Sleepers, has been awarded the tender to become the sole supplier of polymer sleepers for the duration of at least 3 years for KiwiRail in New Zealand. This is a significant breakthrough since the international market introduction of the KLP® Hybrid Polymer Sleeper in 2014, after it was already approved and in use in the Netherlands for over a decade. The main reasons for KiwiRail to choose KLP® Hybrid Polymer Sleepers are the high quality combined with the long life time of the product. The polymer sleepers will be applied in main track and in turn outs.

The Australian and New Zealand agent for Lankhorst, Link Asia Pacific (LinkAP), a technology and marketing company based in Brisbane has introduced the KLP® Hybrid Polymer Sleeper products to the regional railway market. In recent years LinkAP and Lankhorst made joint presentations to various Australian and New Zealand track owners, operators and contractors. Various type approvals and test installations have now resulted in being awarded for this tender.

KLP® Hybrid Polymer Sleepers are a sustainable and maintenance free alternative for wooden or concrete sleepers, turnout sleepers and bridge sleepers. All types have been specially engineered for their own application area, be it

urban, regional or industrial railways. The sleeper is manufactured from a high quality, ductile polymer with steel bars encased, which provides both high strength & high impact resistance properties as well as excellent

damping characteristics. The expected lifespan of the sleepers is more than 50 years, thus representing a good investment with low Life Cycle Costs. KLP® Hybrid Polymer Sleepers furthermore contribute to substantial vibration and sound reduction.

The ban on creosote and restricted availability of hardwood were the main drivers for Lankhorst to develop a sleeper which is manufactured out of 100% recycled plastics as a sustainable and maintenance free alternative to timber sleepers. Since the introduction Lankhorst has supplied various types of hybrid plastic sleepers to several projects in The Netherlands, Belgium, France, Austria, Germany, Sweden, Switzerland, UK, Gabon, Malaysia, Mexico and New Zealand as the latest addition.

Lankhorst Engineered Products, part of Royal Lankhorst

Euronete, is a developer and manufacturer of large molded plastic products using recycled raw materials where this is technically feasible. The products are typically used in civil and construction engineering, infrastructure, offshore oil & gas exploration, poultry industry, transport & storage systems for heavy industry and many other industrial applications.

Since Lankhorst produced its first plastic post through the process of intrusion in the '70s, many innovations have come to maturity, the latest of which is the KLP® Hybrid Polymer Sleeper. The origins of Royal Lankhorst Euronete date back to 1803 when it was established on the exact same location in the Netherlands (Sneek) where the production facilities are still located today. Since 2012 Royal Lankhorst Euronete is part of WireCo WorldGroup, a worldwide leader in wire and synthetic rope manufacturing.



General Manager Sjouke Tjalsma, Technical Manager Aran van Belkom and Commercial Manager Stefan Hofman at the production facility in Sneek, the Netherlands



LANKHORST OFFSHORE



2,000,000 metre rope production milestone for Lankhorst Offshore

Lankhorst Offshore has reached a major rope industry milestone with over 2,000,000 metres of mooring lines produced over the past 10 years at its factories in Portugal and Brazil. This milestone was achieved during production of the mooring lines for the 'Energean Power' Floating Production Storage and Offloading (FPSO) for the Karish and Tanin gas fields; Lankhorst deepwater mooring lines are used on many major offshore mooring projects around the world.



Production of deepwater mooring lines



Lankhorst Offshore manufactures deepwater mooring lines based on Cabral® 512 polyester ropes. They utilise high efficiency sub-rope cores laid parallel within a filter system and an outer braided jacket. Each sub-rope is monitored during rope manufacture to ensure all sub-ropes have equal tension and length. Typically, Cabral® ropes include 7 to 18 sub-ropes dependent on the mooring project; each sub-rope is a braided construction, giving a 100% torque free rope.

Many World Records

Rope design and construction have evolved over the past decade to reflect the changing demands on deepwater mooring. Following the successful deployment of deepwater mooring lines for the Tahiti spar in the Gulf of Mexico, Lankhorst Offshore has set world records for the highest Minimum Breaking Load (MBL) mooring ropes ever produced, and the first polyester ropes manufactured with cut resistant jacket using Dyneema® fibre for Goliat FPSO for Eni Norge. For even greater protection to the mooring line, Lankhorst was the first company to produce a double layer cut resistant jacket with Dyneema® fibre for the Aasta Hansteen spar for HHI-Technip.

"Two million metres of deepwater mooring line is an important manufacturing milestone that reflects not only our production capability but also our technical and

engineering skills and expertise," says Rui Faria, Senior Vice President Oil & Gas Synthetics, Lankhorst Offshore. *"Compared with our first mooring lines, our production is more streamlined allowing us to manufacture ropes that are lighter, stronger and in many cases more durable to withstand the rigours of 30 years deployment in often congested subsea environments."*

Innovation with a Purpose

From its Brazilian manufacturing facility in Queimados, Rio de Janeiro, Lankhorst has led the development of the Cabral® 512 deepwater mooring rope and its deployment for major offshore Brazil pre-salt oil field development projects for Petrobras, SBM Offshore, APL, SOFEC, Teekay, and OOGTK.

Reflecting growing environmental concerns and cost pressures on the offshore industry, Lankhorst has integrated larger reels into its rope production processes at its state-of-the-art manufacturing facility in Viana do Castelo, Portugal. This allows multiple mooring rope segments per reel, streamlining mooring system deployment offshore. In addition, the company was the first supplier to develop returnable shipping reels/ cradles - once used they are sent back to Lankhorst for re-use with large project cost savings while reducing the carbon-footprint for deepwater mooring.

WindFloat Atlantic marks first ever Lankhorst Dyneema® DM20 Mooring

In the first application of Gama98® Dyneema® DM20® fibre ropes as mooring lines, Lankhorst Offshore has supplied mooring tethers to Windplus SA for the 25MW WindFloat Atlantic Project, offshore northern Portugal. The wind turbine generator (WTG) platforms will be moored at a water depth of 85 – 100 m.

The WindFloat Atlantic Project comprises three WindFloat 8MW WTG platforms that will be installed 20km off the coast from Viana do Castelo. The WindFloat is a triangular shaped semi-submersible floater with a wind turbine erected on one of the columns. Each platform's mooring system is made up of three catenary mooring lines of Gama98® rope construction made from Dyneema® DM20® attached to chain and drag embedded anchors. The soft

catenary mooring system will restrain the platform's horizontal motions.

The ease of High Modulus Poly-Ethylene (HMPE) rope handling will result in lower costs compared to spiral strand steel wire both during installation and future disconnection. The mooring lines will be pre-laid on the seabed, prior to the arrival of the WTG platform, and connected using platform mooring connectors.



WindFloat Atlantic Project

"The WindFloat Atlantic Project is a significant mooring project. It marks the first ever use of Gama98® Dyneema® DM20® as mooring tethers in any offshore mooring application," says Alberto Leao, Sales Renewable Energy, Lankhorst Offshore. *"The mooring characteristics of Gama98® Dyneema® DM20® makes it an ideal for offshore*

mooring projects and places Lankhorst at the forefront as the Fibre World Technological Leader on Mooring."

The American Bureau of Shipping (ABS) has certified the WindFloat Atlantic floating foundations and approved the Gama98® mooring rope design.

LANKHORST EURONETE PORTUGAL



Ymuiden Stores offers KLP® picnic table made of fishing gear

Jeroen Dorenbusch and Frank Labee from Ymuiden Stores Holland recently presented Peter Grinwis, manager of Coöperatie Westvoorn, with a sustainable picnic table made of recycled plastic ropes and nets (fishing gear) from the sea.

The table has been produced by our colleagues at Lankhorst Recycling Products. For these specific green tables Lankhorst obtains its raw material from

Plastix in Denmark, a waste recycling company. Plastix collects old fishing gear at various fishing harbours and separates this by material type.



KLP® picnic table offered to Coöperatie Westvoorn

Old nets and ropes are processed into the raw material (granulate) that is used in the Lankhorst machines to then make boards from which the picnic table is assembled. When handing over and giving further explanation on the table, both parties emphasised their shared commitment to work alongside in a sustainable and solution-oriented way, and to create awareness on how to properly deal with discarded fishing gear and the environment.

Turn it into something beautiful

Dorenbusch: *"This sustainable process proves to the contrary that fishing gear would only be a waste product. It is a great raw material for products that can last for decades."* This is the first table that, apart from exhibitions, the Fishing Division is pleased to present and offer to Coöperatie Westvoorn, our biggest customer in the Netherlands. Dorenbusch: *"Put it at a nice spot and show everybody visiting the harbour that everything that happens around the fishing fleet is not to be*

labelled as a waste producing sector. By bringing the fishing gear ashore it can be turned into something beautiful."

Dorenbusch hopes that the authorities in coastal municipalities – that owe a lot to the fishing industry – will pick up this signal and make their street furniture more sustainable; a process in which Lankhorst Recycling Products can provide excellent support.

Environmentally friendly

Manager Peter Grinwis was pleased with the green picnic table, the first one made from polyethylene fishing nets, ropes and plastics. Grinwis: *"Functional, rain, wind and UV resistant. An environmentally friendly table. And one can see that it's made of different materials that are collected in the harbours. This handover is not only a nice gesture, it also emphasises that we as a sector must think and work together in order to manage waste streams properly and to value them instead of considering them as being worthless."*

LANKHORST ROPES



Lankhorst Ropes Slings for Seaway 7 project

Lankhorst Ropes has supplied heavy lift slings to Seaway 7, the Renewables and Heavy Lifting business unit of Subsea 7, for the Dolphin Accommodation Upgrade Project (DAUP) for Shell Trinidad & Tobago Ltd. The Dolphin Platform is located on the East Coast Marine Area (ECMA), offshore Trinidad and Tobago.

The project comprises provision of a Permanent Living Quarter Module (PLQ), consisting of a control room, living quarters and helideck, designed and constructed to facilitate a single lift installation. Shell Trinidad & Tobago contracted the transportation and installation of the PLQ Module to Seaway 7. Manufactured to unprecedented sling length tolerances, the slings were used to safely lift the module with a total weight of 1110t, onto the Dolphin platform.

In total, Lankhorst supplied three Lanko®force slings with a different diameter rope for each sling. One 520 Mt MBL sling measured 104m in length with rope diameter 64mm, another 520 Mt MBL slings was 47.2m in length with rope diameter 76mm, and the third sling used 108 mm diameter rope, measured 46.1 m, and had a load capacity of 1300 Mt MBL. Length tolerances of +/-1% of nominal length

were required by the customer. Working with Precision Tension Solutions (PTS), Lankhorst achieved +/- 0.1% tolerance.

Tight tolerances are critical to heavy lift projects. Variations in sling lengths lead to uneven load distribution, called skew loading, in the object to be lifted and as such can impact the structural integrity of that object.

"With the slings for Seaway 7, we've shown that unprecedented levels of tolerance accuracy can now be achieved with fibre slings even where different diameter ropes are used to prepare the slings," says Wilco Stroet, managing director, Lankhorst Ropes.

Where excessive tolerance deviation was observed during testing, slings were re-spliced to achieve the smallest possible tolerance

Manufactured in Brazil, tested in Houston and project managed from the Netherlands, the slings were delivered on-site within a 6-week time frame.

The Lanko®force endless rope slings (grommet) features a polyester protective braided jacket and hard wearing, low-friction Dyneema® HMPE sleeves at the lift points and crane hook prongs to ensure proper load distribution.



Shell - Seaway 7 project

EXHIBITIONS 2019

LANKHORST ROPES

27 – 29 November International Workboat Show, New Orleans (USA)

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21 November Klimaat 2019 (the Netherlands)

For more actual and detailed information on shows and exhibitions please regularly check our websites.

CONTACT DETAILS

The next edition of Lankhorst Euronete News will be published in March 2020.

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Lankhorst Ropes at Offshore Energy Amsterdam 2019