About Norma

The Norma (I and II) push combination is owned by Captain Grinwis and his family. The combination – vessel and barge – has a total length of 179m and a width of 11.5m. It can carry up to 336TEU. The push combination - built in 2007 – is operated by a crew of six. The vessel sails on a two-week schedule between Antwerp, Rotterdam and Basel.

About Lankhorst Ropes

Lankhorst Ropes is the trade name of the registered company Lankhorst Touwfabrieken bv, which is a part of the Maritime & Offshore Rope Division within the Royal Lankhorst Euronete Group bv.
Lankhorst Ropes combine more than two centuries of experience with a strong innovative ability and technical production techniques. Focus is especially on specialized fiber ropes made from mixes of raw materials in order to create rope products that have an added value with regards to breaking strength, life-time, safety and user friendliness. The Royal Lankhorst Euronete group is a Dutch/Portuguese family-owned company, founded in 1803, with its head office in Sneek, the Netherlands. It holds a leading position in the international markets for ropes, industrial yarns, netting, yachting products and recycled plastic products. The group has achieved this position as a result of focusing its efforts on marketing, innovation, organizational excellence and by constantly adapting to the changing environment.

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Ropes with Dyneema®: The linking pin for push combinations

‘Norma’ up to speed with Dyneema®

In the past, push combinations for inland shipping have used steel wire rope (SWR) to connect their barges. However, the use of SWR is not only labor intensive and time consuming, but can also be dangerous for the vessel’s crew because of so-called fish hooks on the SWR. Furthermore, the use of SWR can lead to damage of the deck, bollards and other equipment, leading to costly repairs and paint jobs. The recent introduction of Dyneema® to the market by Lankhorst Ropes helps overcome such problems.

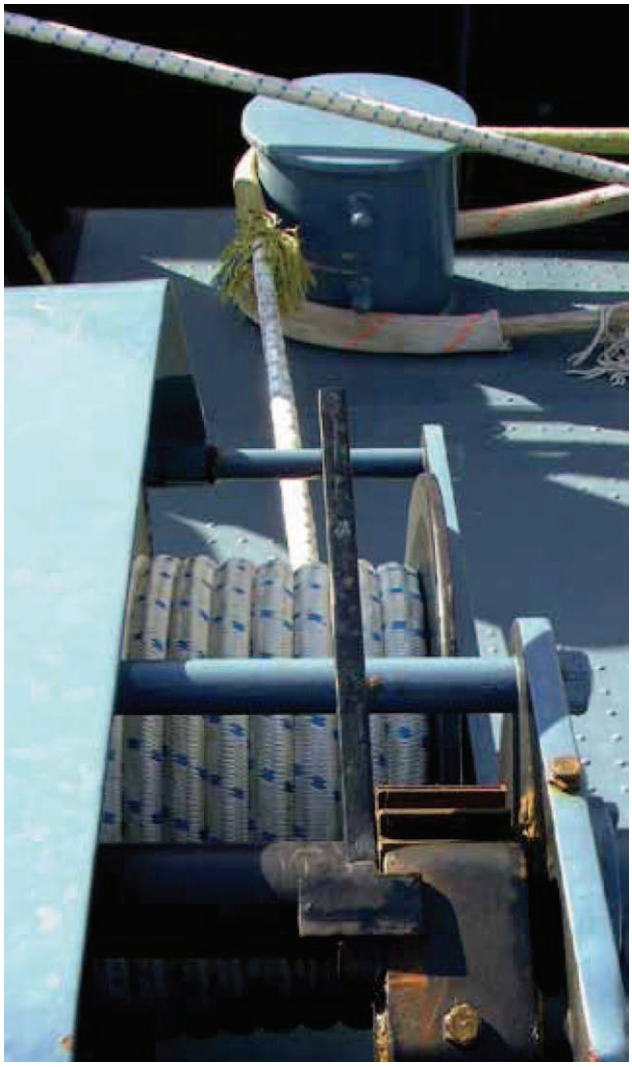
Push combination ‘Norma’ has been in service since July 2007. From its maiden voyage onwards, four Eurolest® ropes with Dyneema® manufacured by Lankhorst Ropes have been used onboard. The purpose of these ropes is to connect the vessel to the barge being pushed. Captain Grinwis and his crew – all of whom have had a lot of previous experience with SWR on other push combinations - are extremely satisfied with the solution offered by ropes made with Dyneema®. The new connecting ropes with Dyneema® are seven times lighter then SWR, yet offer greater strength at a comparable diameter, all resulting in higher handling speeds and the involvement of fewer crew members. The ropes float on water and do not damage deck equipment resulting in far fewer paint jobs and negligible repair requirements.

"Handling the ropes with Dyneema® is a piece of cake," says Captain Grinwis. "When we are 'in flash', connecting the barge can take just five minutes, in some cases disconnecting them can take only two. Moreover, it requires just one crew member to do the job and there is no risk of fishhooks. Another big advantage over SWR is that the ropes are a lot lighter," he continues.

In order to avoid unwanted swirling of the barge and to maintain sailing speed, the barge needs to be bound very tightly to the push vessel. Because of their very low elongation, lines with Dyneema® offer the advantage that - once connected - tension within the ropes hardly needs any readjustment.

"When sailing, the need to readjust tension is minimal, an occasional single click of the winch is often all that is required," confirms Captain Grinwis.

Mr. Brinksma (Lankhorst Ropes) ads: 'Extensive tests during the start-up phase confirmed the outstanding performance of the ropes. Even under harsh conditions, i.e. high speed sailing combined with short and rapid turns of the push combination, independent movement of the container barge was kept to a minimum. The ropes did not slip and tension did not need to be readjusted'.



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The ropes are equipped with a highly abrasion resistant cover made from Dyneema®, ensuring a reliable and durable solution following previous issues with the original polyester jacket.

"Whilst the ropes made with Dyneema® have exceeded our expectations from the start, the jacket - made of polyester thread - proved to be susceptible to wear and tear around the bollards. We discussed this with Lankhorst and they supplied us with new ropes with Dyneema® jackets; since then, the jackets no longer show signs of wear and tear," recalls Captain Grinwis.

After having been in use for seven months, one of the ropes was subjected to a residual strength test. The residual strength was only 2% lower than the original minimum breaking load (MBL). Taking into account that, in the test, the rope broke at its weakest point – the splice – this was an outstanding result. Now after three years of continuous use, one of the ropes has been recently tested again. Despite the fact that the cover and core of the rope were damaged, a residual strength of approximately 70% of its original MBL was recorded – a similarly remarkable result. The rest of the ropes are undamaged and are still in service.

The use of synthetic rope instead of SWR on push combinations has been accredited by IVW (Inspectie Verkeer en Waterstaat; Transport and Water Management Inspectorate, The Netherlands) since 2008.

For the connecting ropes with Dyneema®, the 12 strand braided Eurolest® rope (manufactured by Lankhorst Ropes) is currently in use.

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