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Pulling strong in the mooring line industry

The global mooring line industry is facing difficult technical challenges, as the shipping volumes handled by the maritime industry continue to swell, and the physical sizes of the ships involved in the industry continue to increase. End-users of mooring lines, both on ships and in harbors, require higher-performance products in order to meet these challenges and improve operational reliability. Since 2015, TEHO Ropes, a company trading in mooring lines and rope solutions, has been working closely with Teijin Aramid to deliver innovative high-performance mooring solutions to the marine industry.

TEHO Ropes: Changing with the times

Since being established in 1986, TEHO Ropes has seen important changes to the maritime industry it supplies its products to. "Over the years, we've become a truly global company," says Jan-Kees Noordhoek, Managing Director of TEHO Europe. "We now have offices in Singapore, Shanghai, Houston and Rotterdam, as well as warehouses and distribution points across the world. This global presence is necessary to service a global industry. But globalization has also changed the nature of our business over the years. Our mooring solutions – such as ropes, lifting slings and chains – face more challenging conditions, as ship sizes increase and faster docking and undocking times are required. In light of these developments, we're always looking for innovative technologies that help us to ensure the reliable performance of our products and the safety of people using them."

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"Twaron® offers improvements in the right areas"

Through the contacts he had made at an earlier stage of his career, Jan-Kees Noordhoek already knew about the high-performance properties of Teijin Aramid's materials. "In 2015, I contacted Teijin Aramid's technical team, because I was aware that their aramid technology could offer improved performance in the right areas for mooring lines," he says. "In particular, Teijin Aramid's Twaron® has some extraordinary physical properties. When integrated into mooring lines, these lines can be significantly lighter without compromising on strength, making them much easier to handle. In addition, Twaron-based mooring lines have virtually no creep and offer superb heat resistance, important improvements compared to other high-performance synthetic mooring lines."

Jan-Kees Noordhoek

Going greener

Twaron-based mooring lines do not only improve operational performance, but also offer significant advantages in terms of environmental sustainability. "Twaron-based mooring lines are not affected by high temperatures and do not suffer from creep, which are two of the most common causes of mooring line failures," says Noordhoek. "This means the lines can stay in service longer, and have a lower environmental impact. And when they do come to the end of their service life, they can be fully recycled and returned to one of our many collection points in the world, which minimizes our collective environmental footprint. To incentivize this recycling of the aramid fiber in the mooring lines, TEHO even offers to buy back the waste aramid. We're really trying hard to address the industry's concerns over sustainability!"

Together means stronger

"Our collaboration with Teijin Aramid in developing our Twaron-based mooring lines has been very successful," concludes Noordhoek. "Our knowledge of the market and Teijin's technical know-how has been a great combination. These innovative mooring lines are really the future for the maritime industry, both for their sustainability and functional properties, and I foresee a large-scale adoption of this technology across the industry. Watch this space!"

For more information, please visit **www.teijinaramid.com**

Twaron®

The power of Aramid

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Twaron® & Technora®: Aramids for mooring lines

	Aramid	HMPE	Steel
Great thermal stability	✓	✗	✓
High dimensional stability	✓	✗	✓
High flexibility	✓	✓	✗
Low weight	✓	✓	✗
Does not suffer from creep	✓	✗	✗
Fully recyclable	✓	✗	✗
Low maintenance	✓	✓	✗

Low weight

Reliable in every climate

Recyclable

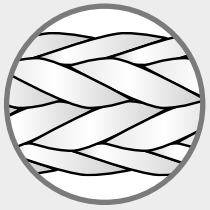
Safe mooring solution

Twaron & Technora vs Steel

- Higher flexibility
- Lower weight
- No burrs

Twaron & Technora vs HMPE

- Greater thermal stability
- Higher dimensional stability
- Does not suffer from creep



Twaron® | Technora®

The power of Aramid