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Loading of cargo from offshore oil and gas facilities requires specialist equipment. In design of this, safety and operational efficiency are a priority. Remora ASA has developed HiLoad, a unique technology for transfer of cargo from a FPSO (floating production storage and offloading) vessel to a tanker.

To maximise usability it can be attached to virtually any tanker, without modification, with no manual operation in the wave zone, maximising safety. This and the way the unit is 'locked' to the tanker hull extends its use to optimise operational efficiency, said an official spokesman.

Trelleborg Engineered Products, a business unit of Trelleborg Group, supplies an advanced sealing and fendering configuration for the HiLoad.

Damping the impact between the HiLoad and the tanker, it then 'locks' them together, avoiding any structural damage to the tanker hull during cargo offloading. The L-shaped HiLoad operates in a similar way to a forklift truck when it picks up a pallet, its horizontal part being driven beneath the ship.

As the HiLoad unit is being deballasted and begins moving towards the tanker bottom, seals meet the hull to form six closed compartments, or cofferdams. The water in the cofferdam is drained.

As this is emptied, air is let in through an open-air vent to the surface. This ensures that the pressure of the trapped air becomes atmospheric (1 bar).

The clearance between the HiLoad pontoon and the tanker bottom is about 3m/ 9ft 9in when HiLoad is approaching the tanker. When the impact fenders on the towers are in contact with the tanker side, a certain amount of thrust is applied towards the tanker.

The ballast system, which has a very high capacity in order to minimize the time for the connection operation, is then activated. In less than one minute the pontoon fenders contact the bottom of the tanker.

The impact fenders on the pontoon will compress and effectively seal and 'lock' the HiLoad to the tanker.

The use of hydrostatic pressure is one of the key principles behind the advanced technology of the 'locking' system. This acts on the top of the HiLoad pontoon and is transferred to the tanker hull through the rubber sealing components from Trelleborg Engineered Products.

By engaging the attachment system, HiLoad will be 'locked' to the tanker with several thousand tons of clamping force, making sure that it will not come loose during operation.



Trelleborg Engineered Products specially engineered the materials for the rubber components that are integral to the attachment and locking process. These need to operate under pressures up to four bar and withstand a wide temperature range between 0°C and +45°C. The components are based on proven technology used for Gina seals successfully installed on immersed tunnels worldwide.

For more information about Trelleborg's engineered products operation, or any of its products and solutions, please visit the [Trelleborg Engineered Products website](#).

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For additional information on the portfolio of Trelleborg's engineered products operation, call Jacco Vonk, Direct: +31 180 495 555, Email jacco.vonk@trelleborg.com.

Notes to Editors:

Trelleborg engineered products operation and Trelleborg Group

Part of the Trelleborg Offshore & Construction business area of Trelleborg Group, the Trelleborg engineered products operation is a leading global developer, manufacturer and provider of engineered polymer solutions to the energy, infrastructure and mining industries. Performing in some of the harshest environments on earth, its principal products are sealing systems for tunnels, a wide range of bearings, polymer solutions for floatover technology and wear resistant products for the mining industry. With local support, a track record of over 100 years and its everyday ingenuity, customers can rely on Trelleborg's engineered products operation to deliver innovative polymer solutions that significantly improve the quality, safety and efficiency of its customers' operations worldwide. www.trelleborg.com/engineeredproducts.

Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative engineered solutions accelerate performance for customers in a sustainable way. The Trelleborg Group has annual sales of about SEK 22 billion (EUR 2.48 billion, USD 3.29 billion) in over 40 countries. The Group comprises five business areas: Trelleborg Coated Systems, Trelleborg Industrial Solutions, Trelleborg Offshore & Construction, Trelleborg Sealing Solutions and Trelleborg Wheel Systems. In addition, Trelleborg owns 50 percent of TrelleborgVibracoustic, a global leader within antivibration solutions for light and heavy vehicles, with annual sales of approximately SEK 16 billion (EUR 1.78 billion, USD 2.36 billion) in about 20 countries. The Trelleborg share has been listed on the Stock Exchange since 1964 and is listed on Nasdaq Stockholm, Large Cap. www.trelleborg.com.