



## MARINE MOORING AND TOWING

BEXCO is a European manufacturer of synthetic ropes with a factory in Hamme, Belgium and a new load-out quayside facility in Antwerp.

BEXCO offers a full range of synthetic rope solutions for towing and mooring applications in the toughest of marine environments. Designed by skilled engineers and produced by craftsmen with decades of experience, our ropes are from the highest quality.

BEXCO prides itself on its personal service and advise to customers. Our sales team and engineers understand your business as no other. Joining forces with our customers, project by project, we design, engineer and manufacture made-to-measure, synthetic rope solutions that are reliable, safe and best fit the specific business requirements of the customer.

BEXCO's personal service and care extends itself until after the initial delivery of the rope. BEXCO offers 'on demand' maintenance solutions based on anticipated demand by fleet composition and location and has contractual stock in strategic harbors across the world so customers can count on the timely availability of quality ropes for their vessels.



**BEXCO**  
OUR ROPE, YOUR SOLUTION



## BEXCO HIGHLIGHTS

- European manufacturer of fiber rope solutions designed by skilled engineers
- Solution-based approach combined with approachable, personal service
- BEXCO understands your marine business. Our rope.Your solution!

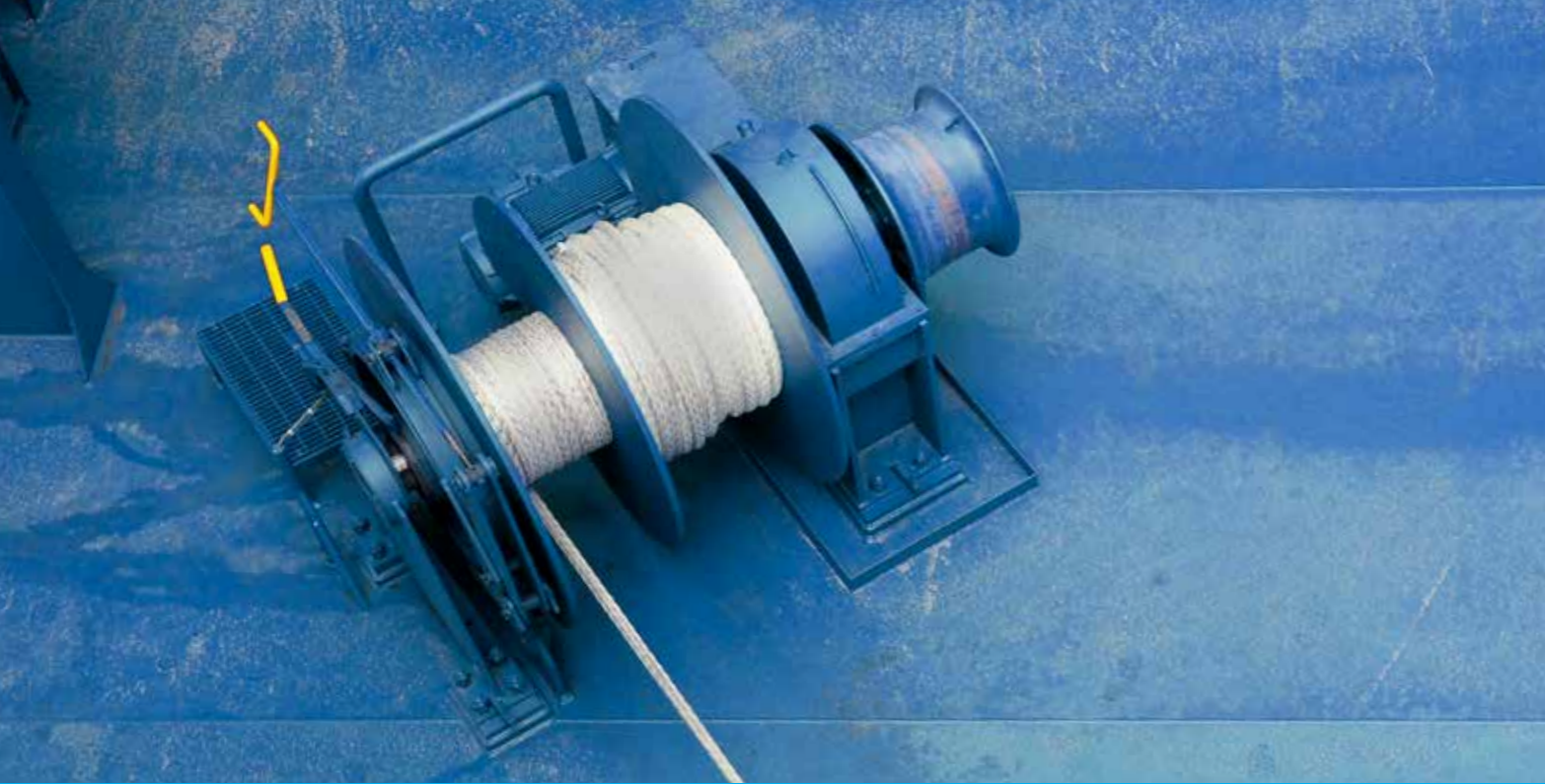
## PRODUCT OVERVIEW

	Strand	Material	Cover/jacket	Approx. Specific Density	Melting point in °C	Abrasion resistance	UV resistance	Temperature resistance	Chemical resistance	dry & wet conditions
Atlas®	6	nylon	–	1,14	215	excellent	excellent	80°C max continuous	reasonable (1)	can be stowed wet
Bexcofloat	8 /12	PP/PES	–	0,99	165-260	very good	good	70°C max continuous	good (2)	wet strength equals dry strength
Bexcoflex	8 /12	PP/PES	–	1,10	165-260	very good	good	70°C max continuous	good (2)	wet strength equals dry strength
Compo 110	8 /12	PP/PES	–	1,10	165-260	excellent	good	70°C max continuous	good (2)	wet strength equals dry strength
Dyneema®	8 /12	SK78	–	0,98	145	excellent	good	70°C max continuous	excellent	wet strength equals dry strength
Ultraline® Bexcord	6+1	PP/PES	composite yarn	0,91	165	good	excellent (1)	70°C max continuous	good (2)	wet strength equals dry strength
Ultraline® Nylon	3	nylon	composite yarn	1,14	215	excellent	excellent (1)	80°C max continuous	reasonable (1)	wet 5% lower than dry
Ultraline® Polyester	3	PES	composite yarn	1,38	260	excellent	excellent (1)	80°C max continuous	good (2)	wet strength equals dry strength
Ultraline® Dyneema®	3/8/12	SK78	composite yarn	0,98	145	excellent	excellent (1)	70°C max continuous	excellent	wet strength equals dry strength

## CERTIFICATIONS



(\*) = excellent, due to cover/jacket (1) = acids, oxidisers and solvents will affect the material (2) = solvents and strong oxidisers may have a mild effect (3) = bases and solvents may have a mild effect



## ROPES MADE OF DYNEEMA® FIBER

### CONSTRUCTION

High Modulus PolyEthylene (HMPE) fibers like Dyneema® fibers offer maximum strength combined with a minimum weight.

#### 12-STRAND

Braided ropes consist of an equal number of interwoven clockwise and anti-clockwise strands. They are well established where ease in handling and non-rotating behavior is important.

#### 8-STRAND

Plaited ropes of the HMPELINE range are well established in marine and offshore applications because of their ease in handling and non-rotating behavior.

### MATERIAL PROPERTIES

Polyethylene is an amorphous plastic with relatively low tensile strength. Through gel spinning, the crystals achieve a maximum orientation. This gives the material a high strength and stiffness. It is commonly known as High Modulus PolyEthylene (HMPE). HMPE has an extremely low coefficient of friction and is extremely resistant to internal and external abrasion. The thermal properties of HMPE are similar to ordinary Polyethylene.

### FEATURES

- **Material:** Ultra – High Molecular Weight Polyethylene (Dyneema® SK78)
- **Construction:** 8strand plaited / 12-strand braided
- **Treatment:** Marine finish
- **Color of Rope:** dia < 32mm: grey – dia > 32mm: white
- **Approx. Spec. Density:** 0,975 floating
- **Melting Point:** 145° C
- **Abrasion Resistance:** Excellent
- **U.V. Resistance:** Good
- **Temperature Resistance:** 70°C max continuous
- **Chemical Resistance:** Excellent
- **Dry & Wet Conditions:** Wet strength equals dry strength

### APPLICATIONS

Mooring  
Towing  
Fishing nets

### SECTORS

Passenger ships  
Container ships  
Bulk carriers  
LNG and LPG carriers  
Barges  
Tugs (harbor towing)  
Dredgers  
Fishing vessels



Technical data sheets available on request.  
Please contact [sales@bexco.be](mailto:sales@bexco.be)



## MAXIMUS®

### CONSTRUCTION

MAXIMUS® is an in-house developed rope made with Dyneema® SK78 fibers. It is a lighter mooring rope with reduced diameters (up to 50%). Achieving a comparable breaking strength, MAXIMUS® is four times lighter in weight than the most commonly used synthetic mooring ropes and seven times lighter than steel wire.

**Maximus® can be produced with different diameters, strengths and lengths in function of the vessel's hardware.** BEXCO develops a custom-made Maximus® rope that meets break load requirements (MBL) as per the OCIMF guidelines while not exceeding the Safe Working Load (SWL) of the vessel equipment and taking into account the desired rope diameter in accordance with winch specifications. Also other specific customer requirements can be taken into account.

### MATERIAL PROPERTIES

The main component of MAXIMUS® is the Dyneema® SK78 fiber. Polyethylene is an amorphous plastic with relatively low tensile strength. Through gel spinning, the crystals achieve a maximum orientation. This gives the material a high strength and stiffness. It is commonly known as High Modulus PolyEthylene (HMPE). HMPE has an extremely low



coefficient of friction and is extremely resistant to internal and external abrasion. The thermal properties of HMPE are similar to ordinary Polyethylene.

The coating of the MAXIMUS® rope, which is achieved by a specialized coating and drying procedure developed at BEXCO, further limits the abrasion common to synthetic ropes, thus significantly extending the lifecycle of the mooring rope.

### FEATURES

- **Material:** Ultra – High Molecular Weight Polyethylene (Dyneema® SK78), BEXCORD®
- **Construction:** 12-strand braided
- **Treatment:** internal and external abrasion-resistant coating
- **Color of Rope:** white
- **Approx. Spec. Density:** 0,975 floating
- **Melting Point:** 145° C
- **Abrasion Resistance:** Excellent
- **U.V. resistance:** Good
- **Temperature resistance:** 70°C max continuous
- **Chemical resistance:** Excellent
- **Dry & wet conditions:** Wet strength equals dry strength

### APPLICATIONS

Mooring  
MAXIMUS® is ideally suited for the mooring of ultra-large vessels.

### SECTORS

Passenger ships  
Container ships  
LNG carriers



## ATLAS®

### CONSTRUCTION

ATLAS® is a six-strand rope made of Nylon. Mono- and multi-filaments are combined in the strands. The monofilaments give the ropes excellent dimensional stability and abrasion resistance. The splicing technique for ATLAS® is very similar to wire rope. The stretch of the nylon in combination with the dimensional stability makes these lines ideal for mooring, especially on a constant-tension winch.

### MATERIAL PROPERTIES

POLYAMIDE or nylon was the first synthetic fiber discovered. Meanwhile the use of polyester is preferred due to its better fatigue properties. Water has a softening effect on the nylon rope under normal conditions of use. A marine finish can be applied to reduce the softening effect.

### FEATURES

- **Material:** 100% high tenacity nylon (mono-and multi-filament)
- **Construction:** 6-strand cross lay
- **Treatment:** None
- **Color of Rope:** White with red marker
- **Approx. Spec. Density:** 1,14 floating
- **Melting Point:** 215° C
- **Abrasion Resistance:** Excellent
- **U.V. Resistance:** Excellent
- **Temperature Resistance:** 80°C max continuous
- **Chemical Resistance:** Reasonable. Acids, oxidizers & solvents will affect the material
- **Dry & Wet Conditions:** Can be stowed wet

### APPLICATIONS

Mooring  
Fishing nets  
ATLAS® is ideal for the use on self-tensioning winches.

### SECTORS

Container ships  
Bulk carriers  
Fishing vessels

**Technical data sheets available on request.  
Please contact [sales@bexco.be](mailto:sales@bexco.be)**





# BEXCOLINE®

## Products in the BEXCOLINE® range

BEXCOFLOAT®  
BEXCOFLEX®

## CONSTRUCTION

The BEXCOLINE® range offers a variety in plaited and braided ropes with 8 or 12-strand construction. The BEXCOLINE® range is well established in marine and offshore applications because of their ease in handling and non-rotating behavior.

## MATERIAL PROPERTIES

The ropes in the BEXCOLINE® range are composite fibers based on our proprietary BEX®-yarn and polyester as a strength member with excellent fatigue characteristics and abrasion resistance. A special marine finish is applied to further increase the wear resistance in a marine environment. This finish has been tested conform ASTM D6611-00. The rope floats, has a very high breaking load for a given diameter and has excellent handling characteristics. Wet and dry strength is identical.

The difference between the ropes in the BEXCOLINE® range is that BEXCOFLOAT® is a floating rope, BEXCOFLEX® is non-floating.

## FEATURES

- **Material:** High-tenacity Bex®-yarn  
High-tenacity polyester
- **Construction:** 8-strand plaited  
12-strand braided
- **Treatment:** Marine finish
- **Color of Rope:** BEXCOFLOAT® - light orange with blue marker yarn  
BEXCOFLEX® - white plus a red marker yarn
- **Approx. Spec. Density:** BEXCOFLOAT® - 0,99 (floating)  
BEXCOFLEX® - 1,1 (non floating)
- **Melting Point:** 165° C / 260° C
- **Abrasion Resistance:** Very good
- **U.V. Resistance:** Good
- **Temperature Resistance:** 70°C max continuous
- **Chemical Resistance:** Good, solvents and strong oxidizers may have a mild effect
- **Dry & Wet Conditions:** Wet strength equals dry strength

## APPLICATIONS

Mooring  
Fishing nets

## SECTORS

Passenger ships  
Container ships  
Bulk carriers  
LPG carriers  
Barges  
Navy vessels  
Fishing vessels

Ropes conform to the INTERTANKO and OCIMF guidelines for tanker mooring

Also available in 8-strand and 12-strand:  
**BEXCORD®** (high-strength polypropylene)  
**COMPO 110**

Technical data sheet on request – please contact sales@bexco.be

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## ULTRALINE®

### Products in the ULTRALINE® range

ULTRALINE® POLYESTER  
ULTRALINE® POLYAMIDE  
ULTRALINE® with DYNEEMA® fiber  
ULTRALINE® WINCHMATE BEXCORD®

### CONSTRUCTION

The ropes of the ULTRALINE® range are of a circular braid design. They have been developed to give a rope extra protection against wear and tear without significantly changing the primary characteristics. It is a logical development from the double-braid, where the outer braid both protects the inner braid and contributes to the strength.

In the circular braid design this duality has been abandoned. The cover is optimized for wear and abrasion resistance and the cores are optimized for strength. This results in both a higher strength and a better design life. The protective cover of the ULTRALINE® range is made of composite yarn. Other cover materials are possible on request.

## ULTRALINE® POLYESTER

### MATERIAL PROPERTIES

Polyester is a particularly reliable fiber with mechanical properties close to those of nylon. The abrasion resistance of polyester is better than that of nylon and so is the tension-tension fatigue performance. Since both fibers are similar, polyester is generally preferred. In favor of nylon are its lower density (1,14 vs. 1,38) and higher energy absorption. A marine finish can be added on request to further improve the lifecycle of the rope.

### FEATURES

- **Materials:** Polyester
- **Construction:** Load-bearing cores with a protective cover of composite yarn
- **Treatment:** On request
- **Color of Rope:** White
- **Approx. Spec. Density:** 1,38 non floating
- **Melting Point:** 260°C
- **Abrasion Resistance:** Excellent
- **U.V. Resistance:** Excellent, due to jacket
- **Temperature Resistance:** 80°C max continuous
- **Chemical Resistance:** Good, bases and solvents may have a mild effect
- **Dry & Wet Conditions:** Wet strength equals dry strength

## ULTRALINE® POLYAMIDE

### MATERIAL PROPERTIES

POLYAMIDE or nylon was the first synthetic fiber discovered. Meanwhile the use of polyester is preferred due to its better fatigue properties. Water has a softening effect on the nylon rope under normal conditions of use. A marine finish can be applied to reduce the softening effect.

### FEATURES

- **Materials:** Polyamide (nylon)
- **Construction:** Load-bearing cores with a protective cover of composite yarn
- **Treatment:** On request
- **Color of Rope:** White
- **Approx. Spec. Density:** 1,14 non floating
- **Melting Point:** 215°C
- **Abrasion Resistance:** Excellent
- **U.V. Resistance:** Excellent, due to jacket
- **Temperature Resistance:** 80°C max continuous
- **Chemical Resistance:** Reasonable; acids, oxidizers & solvents affect the material
- **Dry & Wet Conditions:** Wet strength about 5% lower than dry strength

Technical data sheets available on request.  
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## ULTRALINE®

### ULTRALINE® DYNEEMA® (3-STRAND, 8-STRAND, 12-STRAND)

#### MATERIAL PROPERTIES

Polyethylene is an amorphous plastic with relatively low tensile strength. Through gel spinning, the crystals achieve a maximum orientation. This gives the material a high strength and stiffness. It is commonly known as High Modulus PolyEthylene. It has an extremely low coefficient of friction and is extremely resistant to internal and external abrasion. The thermal properties of HMPE are comparable to ordinary Polyethylene. HPME is also prone to cold flow.

#### FEATURES

- **Materials:** Ultra HMPE (Ultra High Modulus Polyethylene - Dyneema® fiber SK78)
- **Construction:** Load-bearing cores with a cover of composite yarn
- **Treatment:** On request
- **Color of rope:** White
- **Approx. Spec. Density:** 0,975 floating
- **Melting Point:** 145°C
- **Abrasion Resistance:** Excellent
- **U.V. Resistance:** Excellent, due to jacket
- **Temperature Resistance:** 70°C max continuous
- **Chemical Resistance:** Excellent
- **Dry & Wet Conditions:** Wet strength equals dry strength

### ULTRALINE® WINCHMATE BEXCORD®

#### MATERIAL PROPERTIES

BEXCORD® 091 is our improved, high-strength alternative for Polypropylene. For ropes, polypropylene is most often produced as split film. Polypropylene is chemically inert, has a low density (it floats), but has a somewhat lower melting point and lower strength. A special marine finish is applied to further increase the wear resistance in a marine environment. This finish has been tested conform ASTM D6611-00 and is water repellent. Wet and dry strength is identical.

#### FEATURES

- **Materials:** High tenacity BEX®-yarn
- **Construction:** 6 + 1 cross-lay core with a protective cover of composite yarn
- **Treatment:** On request
- **Color of Rope:** White
- **Approx. Spec. Density:** 0,91 floating
- **Melting Point:** 165°C
- **Abrasion Resistance:** Good
- **U.V. Resistance:** Excellent, due to jacket
- **Temperature Resistance:** 70°C max continuous
- **Chemical Resistance:** Good, solvent and strong oxidizers may have a mild effect
- **Dry & Wet Conditions:** Wet strength equals dry strength

ULTRALINE® WINCHMATE BEXCORD® is ideal for the use on winches and is floatable.

#### APPLICATIONS

Mooring  
Towing

#### SECTORS

Container  
Passenger  
Harbor towing

*Above Applications and Sectors apply to the whole ULTRALINE® range.*





## MOORING TAILS

Mooring tails are used in combination with a mooring line, which has limited elongation. The tail provides elasticity in the mooring configuration.

### NYLON TAILS

#### CONSTRUCTION

Nylon tails are made in 8strand plaited construction.

#### MATERIAL PROPERTIES

Nylon tail has the highest elongation. However, the tail loses strength when wet.

### BEXCOFLEX®

BEXCOFLEX® is suitable to be used as a tail. It is a superior alternative to the traditional nylon tail. For more details on Bexcoflex® see page 7.

#### CONSTRUCTION

BEXCOFLEX® tails are made in 8strand plaited construction.

#### FEATURES

##### BEXCOFLEX® compared to NYLON

- Smaller size and weight compared to nylon tails
- According to OCIMF guidelines, synthetic tails should have an MBL of 25% higher than the MBL of a mooring line. Tails made of polyamide (nylon) should have a 37% higher MBL than a mooring line because of the loss of strength when wet.
- Better UV resistance
- Marine finish
- TCLL (comparable to pure polyester and significantly higher than for nylon)
- Elongation (comparable to polyester)

## ULTRASPRINGS®

### ULTRASPRINGS® POLYESTER ULTRASPRINGS® POLYAMIDE

#### CONSTRUCTION

The ULTRALINE® design has been developed to give a rope extra protection against wear and tear without significantly changing the primary characteristics. This has been achieved by braiding a cover over the loadbearing cores. The cover is optimized for wear and abrasion resistance and the core(s) are optimized for strength.

The ULTRASPRING® is a round sling with one three-strand core. The design combines short springs with high strength and easy handling. It has been designed for a longer lifecycle and flexibility.

The cover is a circular braid design and protects the cores against wear. The strength will only be affected the moment the cover has been worn through and the cores start to abrade. The cover can be coated with an additional, two- component PUR in those areas where wear may be expected, for example near the terminations.

## ULTRASPRINGS® POLYESTER

#### MATERIAL PROPERTIES

Polyester is a particularly reliable fiber with mechanical properties quite close to those of nylon. The abrasion resistance of polyester is better than that of nylon and so is the tension-tension fatigue performance. Since both fibers are similar, polyester is generally preferred. In favor of nylon are its lower density (1,14 vs. 1,38) and higher energy absorption. A marine finish can be added on request to further improve the lifecycle of the rope.

#### FEATURES

- **Material:** Polyester
- **Construction:** One-load-bearing cores with a protective cover of composite yarn
- **Treatment:** On request
- **Color of Rope:** White
- **Approx. Spec. Density:** 1,38 non-floating
- **Melting Point:** 260° C
- **Abrasion Resistance:** Excellent
- **U.V. resistance:** Excellent, due to jacket
- **Temperature resistance:** 80°C max continuous
- **Chemical resistance:** Good, bases and solvents may have a mild effect
- **Dry & wet conditions:** Wet strength equals dry strength

## ULTRASPRINGS® POLYAMIDE

#### MATERIAL PROPERTIES

POLYAMIDE or nylon was the first synthetic fiber discovered. Meanwhile the use of polyester is preferred due to its better fatigue properties. Water has a softening effect on the nylon rope under normal conditions of use. A marine finish can be applied to reduce the softening effect.

#### FEATURES

- **Material:** Polyamide (nylon)
- **Construction:** load-bearing cores with a protective cover of composite yarn
- **Treatment:** On request
- **Color of Rope:** White
- **Approx. Spec. Density:** 1,14 non-floating
- **Melting Point:** 215° C
- **Abrasion Resistance:** Excellent
- **U.V. resistance:** Excellent, due to jacket
- **Temperature resistance:** 80°C max continuous
- **Chemical resistance:** Reasonable; acids, oxidizers & solvents will affect the material
- **Dry & wet conditions:** Wet strength about 5% lower than dry strength

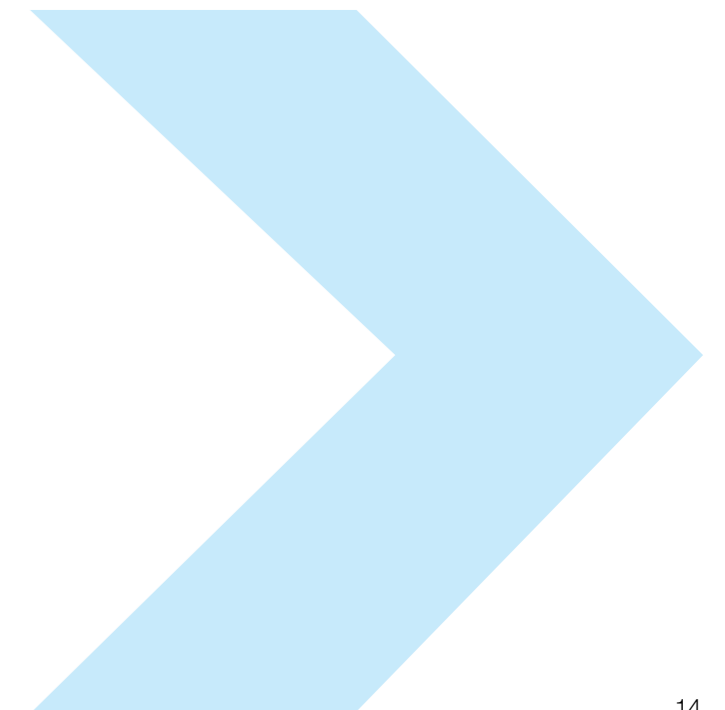
#### APPLICATIONS

Mooring

#### SECTORS

LNG carriers

Technical data sheets available on request.  
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# PENDANTS

## PENDANT WITH LOOSE COVER MADE WITH DYNEEMA® FIBRE

The pendant is the first part of the mooring configuration. The pendant is produced in DYNEEMA® fiber to increase lightness of handling. The first meters of the pendant have a loose cover in DYNEEMA® fiber in order to increase the abrasion-resistance of the pendant in the closed chocks of the towed ship.

### CONSTRUCTION

High Modulus PolyEthylene (HMPE) fibers like DYNEEMA® fibers offer maximum strength combined with a minimum weight.

### 12-STRAND

Braided ropes consist of an equal number of interwoven clockwise and anti-clockwise strands. They are well established where ease in handling and non-rotating behavior is important.

### MATERIAL PROPERTIES

Polyethylene is an amorphous plastic with relatively low tensile strength. Through gel spinning, the crystals achieve a maximum orientation. This gives the material a high strength and stiffness. It is commonly known as High Modulus PolyEthylene (HMPE). It has an extremely low coefficient of friction and is extremely resistant to internal and external abrasion. The thermal properties of HMPE are similar to ordinary Polyethylene.

## FEATURES

- **Material:** Ultra – High Molecular Weight Polyethylene (Dyneema® SK78)
- **Construction:** 12strand braided
- **Treatment:** Marine finish
- **Color of Rope:** dia < 32mm: grey – dia > 32mm: white
- **Approx. Spec. Density:** 0,975 floating
- **Melting Point:** 145° C
- **Abrasion Resistance:** Excellent
- **U.V. resistance:** Good
- **Temperature resistance:** 70°C max continuous
- **Chemical resistance:** Excellent
- **Dry & wet conditions:** Wet strength equals dry strength

## APPLICATIONS

Towing

## SECTORS

Tugs (Harbor towing)



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1



2



3



4

## ACCESSORIES

### ROPE PROTECTION

#### POLYESTER FIRE HOSE (1)

Polyester sleeve is used as standard eye protection. It can also be used for protection of extra lengths on the synthetic rope.

Color: red

#### BEXCO PROTECTION SLEEVE (5)

The BEXCO PROTECTION SLEEVE is a composite of Nylon and Dyneema®. An in house engineered product to be used as extra protection for ropes in chocks, fairleads and on sheaves to extend the lifecycle of high quality mooring ropes. The standard length is 2 meters and the width is adjusted to fit any rope diameter. Different sizes are available on request.

#### DELTAWEB® (3)

DELTAWEB® has been developed for protecting a splice against wear and tear. It's a fabric woven from the highly abrasion-resistant BEXCOLINE® composite yarn i.e. high-tenacity BEXCORD® & high-tenacity polyester. Because DELTAWEB® is made from the same material as our usual covers, it will not change the weight or the handling of the rope significantly. DELTAWEB® can also be applied on a rope in use, giving the rope additional protection if the original cover is worn.

Color: white

#### LOOSE COVER (2)

Perfect solution to use on DYNEEMA®/HMPE pendants for protection into the closed chocks (towing application)

Made of DYNEEMA® fibers.

Color: white (other colors on request)

### SOFT SHACKLE (4)

Soft rope shackle made of DYNEEMA® SK78 fibers / HMPE. Will tighten under tension and is easy to remove when relaxed

Floats

Color: White/Grey

### REPAIR KITS

#### STANDARD REPAIRKIT ULTRALINE®

- 2m Deltaweb® cloth
- PA6 braided nylon 3mm 200m (sewing)
- PA6 braided nylon 6mm 100m (seizing)
- 1 sewing needle
- Delivered in a plastic box

#### EXTENSIVE REPAIRKIT ULTRALINE®

- 4m Deltaweb® cloth
- 2 spools HMPE sewing yarn
- 50mm wide adhesive tape
- 19mm wide adhesive tape
- PA6 braided 7mm lashing rope 250m
- 1 sewing needle
- Delivered in a plastic box

### GENERAL FEATURES FOR ALL BEXCO ROPES

- **Coil length:** 220m
- **Spliced strength:** +/- 10% lower
- **Weight and length tolerance:** +/- 5%
- **Diameter:** +/- 2%

MBL = Minimum Breaking Load conform ISO 2307  
Breaking strength without splices or any other termination.

Other sizes are available on request.



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## CONTACT



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**B E X C O**  
OUR ROPE, YOUR SOLUTION