

Dear Reader,

I enclose the first issue of our new information newsletter BEXCONNECT. Our aim is to use BEXCONNECT to keep you fully up-to-date with what is going on at our company, as well as to tell you more about our range and new products. You can also find this information on our website at www.bexco.be and download it if you wish. One snippet of news that we can tell you about already is the forthcoming change of name for our subsidiaries Vermeire and Le Lis, which are to be brought together under the single name of Bexcoropes. Bexcofibres will continue to develop its extrusion businesses in 'Strapping' and 'Yarns' further. We'll be telling you more about this in the coming months.

In this first issue of BEXCONNECT, we introduce you to the successful products manufactured and marketed by Vermeire nv (soon to be BexcoRopes) that have applications in the maritime market. Watch out in particular for the technically enhanced specifications that once again demonstrate that we are able to do full justice to the technology required to play a key role in our market.

Edmond Blommaerts
for EBIM bvba
Managing Director

Ropemaker since 1725

The recent manufacture and supply of the spare Polyester tautlines for the P47 could be considered as the symbolic and true inauguration of the new premises of the Bexco nv after the acquisition of Le Lis in 1999. The group invested heavily in new production capacity, new offices and new employees resulting in a growing turnover and reputation in the world maritime and offshore market. Important contracts, of which the two new orders for DeepRope (heavy Polyester mooring lines) and several complete SPM mooring systems were the masterpiece. Also the Atlas® and Ultraline®ropes are doing very well.

Thanks to the integration between Vermeire and Le Lis, these two rope manufacturers, operating under the holding "Bexco nv", can now be considered as one of the keyplayers in rope making for the shipping, offshore and deepwater market. Basis of this merger was the joint venture of both companies for the production and marketing of "DeepRope,, Deepwater Mooring Lines in Polyester and Dyneema. This resulted in the qualification of Le Lis as one of the four approved manufactures worldwide of Petrobras and the supply of the P36 spares.

Petrobras changed its specification recently, requiring added protection against sand or mud ingress. If the ropes are dropped accidentally on the seabed, this should not lead to negative effects of the rope's longevity. Le Lis is the first ropemaker to supply deepwater mooring lines with protection against mud ingress, conform Petrobras specification and certification by DNV. All the DeepRope®lines are put on the market by Le Lis.

In the SPM market, Vermeire has successfully supplied their Ultraline Nylon SPM hawsers to API, TOTAL, ELF, MOBIL and others. The range is now completed with the Deltaflex 2000 SPM hawsers of Le Lis, a rope design that is also well established in the market, with LOOP, SUMED, UNOCAL, SHELL, ESSO, C.P.C. and others as reference. All the SPM lines are now put on the market by Vermeire.

Vermeire is one of the leading suppliers in the shipping industry with a very complete range of products.



The company is mainly known for its Atlas®, and Caesar mooring lines, its Ultraline® (used for mooring and special projects - cable laying etc...) and its Bexcolines, ropes based on a composite fibre with high strength and very high abrasion resistance.

This experience and know-how are the basis for a strategy in which innovation and professionalism are two keypoints. The newbuilding (new offices and substantial factory expansion) was a first necessary step to be able to expand the production capacity. At the same time, new employees have been added to the existing organisation. Recruiting a new R&D Manager was the next big step for the company in view of this future focused strategy.

It is no coincidence that all those factors and investments led to a growing confidence and faith in the company and its products, resulting in not only the recent supplies to Petrobras, but also recent first supplies for the Legendre project (Ultraline® Nylon for Apache/Woodside Australia - Bluewater) and the Atlas Cove (Ultraline® Nylon for Nigeria - SBM) in the SPM market. In the marine market, it led to important supplies to the M.O.D. (Dyneema) and Global Marine (Ultraline® Polyester) and several large newbuild contracts on Atlas®.

Both companies Vermeire and Le Lis will use in the future a new brandname 'Bexcoropes'.

If you are interested in more technical info, graphs, reference list, company profiles please come and watch it at www.bexco.be

Company profile

Bexcoropes, your leading manufacturer of ropes for marine and offshore markets active since 1725. In marine applications the product range from polypropylene over polyester and polyamide (nylon) to Bexcoline. Bexcoline is a composite fibre, which gives a cost-effective alternative to nylon with a better fatigue life in water. Nylon ropes are used as towing springs and in a special six-strand design, called Atlas®, for ship mooring.

In offshore applications HMPE (Dyneema), Aramid ropes and Single Point Mooring hawsers are well-known products. The systems comply with OCIMF guidelines.

The company is ISO certified and located some 30 minutes from the Port of Antwerp and some 50 minutes from Brussels. Vermeire is a member of the Bexco n.v. and operating under the brandname 'Bexcoropes'. Other companies in the group are Le Lis and Bexco Fibres. Le Lis produces the deep-water mooring ropes both in polyester and HMPE. Recently they have moved offices and factory to a new location. The group has some hundred employees and in 1999 a turnover of 15 million €.

Product groups

Our ropes can be grouped in three categories:

Eight-strand or laid & braided



Six-strand crosslay



Ultraline®



1. Standard ropes (ropes manufactured conform well-established standards). Typically are eight-strand ropes. (laid & braided)
2. Specialities (ropes for which our expertise and knowledge created added value). Depending on the use these can be eight-strand, six-strand crosslay or Ultraline® ropes. This last construction has an external cover for extra abrasion protection.
3. Tailor made ropes (ropes developed for optimal performance in specific applications). Typical example are towing lines, special towing springs and SPM hawsers. Most of these ropes are developed and produced conform customer specification.

Material choice

In principle ropes can be made from any fibrous material. However the most commonly used fibres in marine and offshore are: polypropylene, nylon, polyester and HMPE. Other materials, like aramids, are not discussed here. For a complete overview on differences between materials please visit our website: <http://www.bexco.be>

Product range

Here only an overview is given of our products, the range of diameters and designs available are more extensive than shown here.

For a complete overview please visit our website:

<http://www.bexco.be>

PP-Line

For ropes polypropylene is most often produced as split film. The strength is obtained in the drawing process. Polypropylene is chemically inert, a low density (it floats) and has a low price, but with a somewhat lower melting point and lower strength.

Bexcoropes has two regular qualities in eight-strand: ropes conform EN 699 and the high-strength Bexcord 091. The last quality also is extra protected against UV light.

The Ultraline® Winchmate is a six-strand design, especially developed for use on a winch. A complete description of our PP-line and other polypropylene designs can be found on our website.

		PP-line EN699 8-strand laid & braided				Bexcord 091 8-strand laid & braided				Ultraline® Winchmate Bexcord 091 6+1 crosslay			
diam	size	Min Break Load		weight		Min Break Load		weight		Min Break Load		weight	
mm	inch	tf	kN	kg/100m	kg/coil	tf	kN	kg/100m	kg/coil	tf	kN	kg/100m	kg/coil
24	3	8,1	80	26	57	10	97	25	55	-	-	-	-
28	3,5	11	105	36	79	13	131	34	75	16	156	37	82
32	4	13	132	46	101	17	169	44	97	21	204	49	107
36	4,5	17	166	59	131	22	219	53	118	26	258	62	135
40	5	21	201	72	158	27	263	69	152	33	319	76	167
44	5,5	25	241	88	194	32	318	84	185	39	386	92	202
48	6	29	280	104	229	39	378	100	220	47	456	109	239
52	6,5	33	324	122	268	45	440	117	257	56	553	128	281
56	7	38	371	142	312	52	510	136	299	64	631	150	329
60	7,5	43	424	163	359	59	582	156	343	76	742	172	378
64	8	49	480	185	407	67	658	177	389	84	820	194	427
72	9	62	603	234	515	85	844	229	504	107	1044	247	542
80	10	76	741	290	638	104	1024	282	620	129	1259	301	661
88	11	91	889	351	772	126	1235	343	755	156	1526	368	809
96	12	107	1050	417	917	149	1464	408	898	-	-	-	-

* standard coil length : 220m

Product range

Dynaline

High Modulus PolyEthylene (HMPE) is a high-strength Polyethylene. Through gel spinning a high-strength, highly crystalline material is produced with a strength comparable to that of wire for the same size, but with a much lower weight (8 to 10 times lower than wire).

The material (SK75) has an extremely low coefficient of friction, is very resistant to abrasion, but is prone to cold flow or creep. The lifetime under fatigue loads is extraordinary.

A detailed description of Dyneema and its characteristics can be found on our website. Here the two main qualities are given.

		Dynaline 8-strand laid & braided				Ultraline® Dyneema 3-strand parallel core			
diam	size	Min Break Load		weight		Min Break Load		weight	
mm	inch	tf	kN	kg/100m	kg/coil	tf	kN	kg/100m	kg/coil
24	3	41,4	406	26,7	58,8	-	-	-	-
28	3,5	56,2	551	36,4	80	46	451	45	99
32	4	73,0	716	48	105	67	660	60	132
36	4,5	92	903	60	132	90	880	75	166
40	5	113	1109	74	163	97	955	89	196
44	5,5	136	1334	90	198	127	1249	110	241
48	6	161	1578	107	235	157	1540	130	286
52	6,5	188	1840	126	276	187	1835	151	331
56	7	216	2119	146	320	224	2200	175	385
60	7,5	246	2413	167	368	254	2495	195	430
64	8	278	2723	190	418	277	2715	222	489
72	9	345	3381	241	530	359	3520	277	609
80	10	417	4086	297	654	426	4180	340	747
88	11	492	4826	360	791	538	5280	413	909
96	12	566	5555	428	942	606	5941	489	1076

* standard coil length : 220m

Bexcopet

Polyester is a very reliable fibre 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. Bexcopes produces two qualities in eight-strand: ropes conform EN 697 and the high-strength Bexcopet 138.

The equivalent design with further optimisation for abrasion resistance is the Ultraline® Polyester. Other designs can be found on our website.

		PES EN697 8-strand laid & braided				Bexcopet 138 8-strand laid & braided				Ultraline® Polyester 3-strand parallel core			
diam	size	Min Break Load		weight		Min Break Load		weight		Min Break Load		weight	
mm	inch	tf	kN	kg/100m	kg/coil	tf	kN	kg/100m	kg/coil	tf	kN	kg/100m	kg/coil
36	4,5	19	190	98	216	23,2	230	84,5	186	47	465	92	203
40	5	24	235	121	266	28,3	280	104	230	55	543	112	246
44	5,5	28	279	147	323	33,9	336	126	278	67	660	133	293
48	6	34	329	175	385	39,9	396	150	330	83	815	161	353
52	6,5	39	384	205	451	46,5	460	176	388	99	970	188	414
56	7	45	439	238	524	53,4	529	204	450	119	1163	222	488
60	7,5	50	489	273	601	60,8	603	235	516	134	1318	249	548
64	8	58	568	311	684	68,7	681	267	588	150	1473	284	626
72	9	72	707	393	865	85,8	850	338	744	190	1860	353	776
80	10	88	867	485	1067	105	1037	417	918	229	2248	433	953
88	11	106	1040	587	1291	125	1243	505	1111	284	2790	528	1161
96	12	125	1230	699	1538	148	1467	601	1322	332	3255	630	1386
104	13	145	1420	820	1804	173	1710	705	1551	387	3798	726	1598
112	14	165	1620	950	2090	199	1972	818	1799	-	-	-	-
120	15	190	1860	1090	2398	227	2253	939	2066	-	-	-	-

* standard coil length : 220m

Bexcolon

Since nylon was the first fibre discovered it is better established than polyester. In favour of nylon is its lower density (1.14 vs. 1.38 for polyester) and higher energy absorption.

Bexcopes produces two qualities in eight-strand rope: standard conform EN 696 and the high-strength Bexcolon 114.

The equivalent design with further optimisation for abrasion resistance is the Ultraline® Nylon. Other designs can be found on our website.

		Nylon EN696 8-strand laid & braided				Bexcolon 114 8-strand laid & braided				Ultraline® Nylon 3-strand parallel core			
diam	size	Min Break Load		weight		Min Break Load		weight		Min Break Load		weight	
mm	inch	tf	kN	kg/100m	kg/coil	tf	kN	kg/100m	kg/coil	tf	kN	kg/100m	kg/coil
24	3	12	118	36	78	15	145	36	78	-	-	-	-
28	3,5	16	155	49	107	19	191	49	107	23,9	234	51,7	114
32	4	20	196	63	139	25	241	63	139	30,7	301	64,5	142
36	4,5	25	244	80	176	31	300	80	176	39,8	391	80,9	178
40	5	30	294	99	218	37	362	99	218	46,5	456	98,3	216
44	5,5	36	351	120	264	44	432	120	264	56,5	554	117	257
48	6	42	412	142	312	52	507	142	312	69,8	684	140	308
52	6,5	49	479	166	365	60	589	166	365	83,0	815	164	360
56	7	56	549	193	425	69	675	193	425	99,5	977	192	423
60	7,5	64	626	221	486	78	770	221	486	113	1107	216	474
64	8	72	706	252	554	89	868	252	554	126	1237	247	543
72	9	90	882	319	702	111	1085	319	702	159	1562	305	671
80	10	110	1078	394	867	135	1326	394	867	192	1888	375	825
88	11	131	1284	477	1049	161	1579	477	1049	239	2344	455	1002
96	12	154	1510	568	1250	189	1857	568	1250	279	2734	545	1199

* standard coil length : 220m

Bexcoline

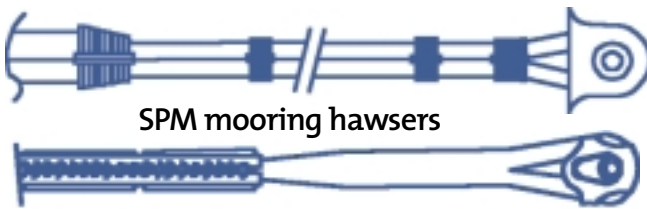
The Bexcoline composite combines the cost-effectiveness and floatability of the bexcord yarn with the fatigue life and abrasion resistance of polyester. The fatigue life is comparable to pure polyester, but the weight for a given strength is comparable to that of nylon. Thus it combines the advantages of nylon with those of polyester.

There are two types:

- + COMPOSITE 099 floats, has a good fatigue and is very cost-effective.
- + COMPOSITE 110 has a better fatigue and a somewhat higher friction.

		Atlas® 6 strand crosslay			
diam	size	Min Break Load		weight	
mm	inch	tf	kN	kg/100m	kg/ coil
36	4,5	26	255	83	183
40	5	31	304	100	220
44	5,5	42	412	125	275
48	6	50	491	148	326
52	6,5	54	530	160	352
56	7	66,5	652	200	440
60	7,5	70	687	217	477
62	7,8	79	775	235	517
64	8	81	795	245	539
68	8,5	94	922	280	616
70	8,8	103	1010	310	682
72	9	108	1059	335	737
78	9,8	120	1177	364	801
84	10,5	140	1373	425	935
96	12	190	1864	585	1287

* standard coil length : 220m



SPM mooring hawsers

Reference list

On our website a reference list can be found of our main marine and offshore projects.

Le Lis is Vermeire's sister company active in offshore. Le Lis manufactures DeepRope® mooring lines for deepwater application. For a detailed description of Le Lis products please visit our website: www.bexco.be. They will use in the future the brandname Bexcoropes.

Product range

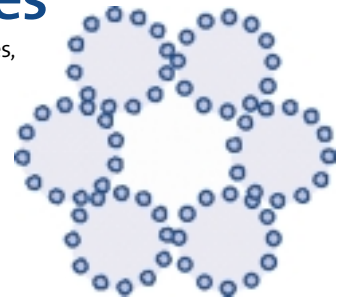
		composite 099 8-strand laid & braided				composite 110 8-strand laid & braided				Ultraline® Winchmate Composite 125 8-strand laid & braided			
		Min Break Load		weight		Min Break Load		weight		Min Break Load		weight	
diam	size	tf	kN	kg/100m	kg/coil	tf	kN	kg/100m	kg/coil	tf	kN	kg/100m	kg/ coil
40	5	30,2	296	82	180	34,2	336	87	191	39	385	66	146
44	5,5	36,5	358	100	220	41	400	106	233	48	466	80	177
48	6	43	422	118	260	47	465	125	275	56	551	133	292
52	6,5	50	495	139	306	56	545	147	323	67	654	158	347
56	7	58	569	162	356	63	620	169	372	77	757	182	401
60	7,5	66	647	185	407	72	710	195	429	88	866	211	465
64	8	75	736	210	462	82	801	221	485	100	977	241	529
68	8,5	85	829	240	528	92	901	249	549	111	1088	270	593
72	9	94	927	268	590	102	1001	280	616	124	1214	303	666
76	9,5	103	1015	299	658	112	1101	311	685	138	1353	338	743
80	10	116	1137	330	726	125	1224	346	761	152	1492	373	821
88	11	139	1363	400	880	148	1456	417	918	184	1802	451	992
96	12	165	1618	475	1045	174	1711	498	1095	-	-	-	-
104	13	193	1893	558	1228	204	2000	584	1285	-	-	-	-
112	14	224	2202	646	1421	237	2330	677	1490	-	-	-	-

* standard coil length : 220m

Atlas® & Caesar ropes

Atlas® and Caesar ropes are special six-strand, laid ropes, made from Nylon mono- and multifilament.

The monofilaments give the rope an excellent stability on a winch. With the high elongation of the Nylon this makes these ropes ideal for ship mooring. Please see our website for more details.



Tailor-made

For an overview of our products that have been optimised for specific applications please visit our website or contact us directly. Here two applications are mentioned. Bexcoropes has extensive experience in the manufacture of Single Point Mooring Hawsers (ropes for mooring a vessel to a single buoy in offshore use). They can be either single or grommet ropes, see sketches. Depending on the conditions of use either Deltaflex 2000 or Ultraline® Nylon constructions can be used. Another special design is the Ultraspring, both in nylon and polyester. This spring is mainly used in towing, where these ropes combine stretch with excellent life in a rough environment.



BEXCOROPES

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