



# SINGLE POINT MOORING

BEXCO is one of the few type approved and certified producers of Single Point Mooring Hawsers in the world. These hawsers, which essentially connect oil and gas majors' points of supply with transportation in the mid-stream of the supply chain process, need to meet the most rigorous standards of quality and reliability. BEXCO's quality and service levels for SPM's are highly rated in the market.

The construction of individual SPM hawsers varies from location to location, depending on conditions and operational procedures. BEXCO offers hawsers custom-made to these operational needs.

## PRODUCT OPTIONS

### Hardware options

BEXCO can also provide a comprehensive range of equipment for offshore mooring systems designed to suit the specific requirements of different locations and water temperatures. We supply following items in full assemblies for first installations or separately as spare parts:

- Mooring hawsers
- High quality messenger lines
- Support buoys
- Pick-up ropes
- Chafe chains
- Shackles
- Associated fittings

### Inherent Buoyancy floatation system

A common problem in using hawsers with floats is that during the lifetime of the hawser floats tend to discard from the hawser and get lost. A second problem when using hawsers with floats is that the surface of the assembly is not perfectly smooth. To overcome these problems, Inherent Buoyancy has been developed, which makes a hawser easier to install and retains its buoyant behaviour. The make up of the Inherent Buoyancy floatation system enhances the mooring hawser's abrasion resistance to external items in the field and has the added benefit of reducing how much the rope will flex with the wave action. This in turn reduces internal yarn-on-yarn abrasion damage, and helps to extend retirement times. Hawsers with Inherent Buoyancy are 100 % polyurethane coated over their entire length and are available in BL3 (Ultraline® Polyamide), DF8 (Deltaflex®), and DB12 (Double-Braided Polyamide) construction. Inherent Buoyancy does not affect mechanical characteristics of the hawser.

### SPM TYPES AND OCIMF CONFORMITY

Our SPM BL3 (Ultraline® Polyamide), DF8 (Deltaflex®), and DB12 (Double-Braided Polyamide) mooring hawsers fully conform to the requirements of the OCIMF guidelines, following an exhaustive documented OCIMF prototype test programme. We use only the best quality yarns of multifilament nylon, high tenacity polyester and blended fibres to manufacture our mooring system hawsers. The hawser can either be a single rope or a grommet. In the grommet configuration two legs are laid parallel.



## SPM BL3

### CONSTRUCTION

Ropes of the ULTRALINE range are of a circular braid design and 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 optimised for wear and abrasion resistance and the core(s) are optimised for strength or fatigue. This results in both a higher strength and a better design life than with other rope designs.

### MATERIAL PROPERTIES

Polyamide or Nylon was the first synthetic fibre discovered. It is available as a fibre as nylon 6. Since nylon was the first fibre discovered it is better established than polyester but the fatigue properties of polyester are better than those of nylon. The UV resistance for this rope is acceptable.

### FEATURES

<b>Materials</b>	Polyamide (nylon)
<b>Construction</b>	Load-bearing cores with a protective cover of polyamide
<b>Treatment</b>	Marine finish
<b>Colour of Rope</b>	White with green marker
<b>Approx. Spec. Density</b>	1,14 non-floating
<b>Melting point</b>	215°C
<b>Abrasion resistance</b>	Excellent
<b>U.V. resistance</b>	Excellent, due to jacket
<b>Temperature resistance</b>	80°C max continuous
<b>Chemical resistance</b>	Reasonable; acids, oxidisers & solvents will affect nylon
<b>Dry &amp; wet conditions</b>	Wet strength ± 5% lower than dry strength
<b>Weight</b>	± 5%
<b>Diameter</b>	± 2%

Ultraline® Polyamide Hawsers are manufactured in accordance with OCIMF 2000 regulations



## SPM DF8

### CONSTRUCTION

Plaited ropes of the BEXCOLINE range are well established in marine and off-shore applications, because of their ease in handling and non-rotating behaviour. They are produced on a plaiting machine containing eight reels, each containing one strand, groups of two reels interweave as a pair around the other pairs of reels to produce an eight strands rope of a somewhat square cross section.

### MATERIAL PROPERTIES

DF8 is a mixed or composite fibre based on our proprietary BEX- yarn and polyester as a strength member. It combines the excellent fatigue characteristics and abrasion resistance of polyester with the low density of Bexcord. The fatigue life is comparable to pure polyester, but the weight for a given strength is comparable to that of nylon, giving the rope excellent handling characteristics. 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

<b>Materials</b>	High tenacity BEX-yarn and high tenacity polyester
<b>Construction</b>	8 strand plaited
<b>Treatment</b>	Marine finish
<b>Colour of Rope</b>	White with blue and orange marker
<b>Approx. Spec. Density</b>	1,14 non-floating
<b>Melting point</b>	165°C / 260°C
<b>Abrasion resistance</b>	Excellent
<b>U.V. resistance</b>	Good
<b>Temperature resistance</b>	70°C max continuous
<b>Chemical resistance</b>	Good, solvents and strong oxidisers may have a mild effect
<b>Dry &amp; wet conditions</b>	Wet strength equals dry strength
<b>Weight</b>	± 5%
<b>Diameter</b>	± 2%

DF 8 Single Point Mooring Hawsers are manufactured in accordance with OCIMF 2000 regulations



Dia mm	Circ "	Weight kg/100m	MBL SINGLE				MBL GROMMET			
			DRY		WET		DRY		WET	
			tf	kN	tf	kN	tf	kN	tf	kN
80	10	406	148	1451	141	1379	252	2467	239	2344
88	11	506	188	1847	179	1755	320	3140	304	2983
96	12	585	215	2111	204	2006	366	3589	348	3409
104	13	699	256	2507	243	2382	434	4262	413	4049
112	14	798	296	2903	281	2758	503	4935	478	4688
120	15	914	336	3299	319	3134	572	5608	543	5327
128	16	1031	377	3694	358	3510	640	6281	608	5967
136	17	1164	430	4222	409	4011	732	7178	695	6819
144	18	1316	484	4750	460	4513	823	8075	782	7671
152	19	1490	538	5278	511	5014	915	8972	869	8524
160	20	1624	592	5806	562	5515	1006	9869	956	9376
168	21	1785	646	6333	613	6017	1098	10767	1043	10228
176	22	1986	726	7125	690	6769	1235	12113	1173	11507
184	23	2165	780	7653	741	7270	1326	13010	1260	12359
192	24	2351	834	8181	792	7772	1418	13907	1347	13212
200	25	2554	915	8972	869	8524	1555	15253	1477	14490
208	26	2756	995	9764	946	9276	1692	6599	1607	15769
216	27	2957	1076	10556	1022	10028	1829	17944	1738	17047

Dia mm	Size "	Weight kg/100m	MBL SINGLE		MBL GROMMET	
			tf	kN	tf	kN
			80	10	393	140
88	11	483	170	1672	290	2843
96	12	569	198	1945	337	3307
104	13	692	239	2347	407	3989
112	14	800	275	2699	468	4589
120	15	915	313	3072	532	5222
128	16	1037	353	3461	600	5883
136	17	1190	402	3947	684	6710
144	18	1336	449	4409	764	7496
152	19	1496	500	4908	851	8344
160	20	1649	549	5382	933	9150



# SPM DB12

## CONSTRUCTION

Ropes with a double-braid design are traditionally the preferred construction for single point mooring hawsers.

## MATERIAL PROPERTIES

Polyamide or Nylon was the first synthetic fibre discovered. It is available as a fibre as nylon 6. Since nylon was the first fibre discovered it is better established than polyester but the fatigue properties of polyester are better than those of nylon. The UV resistance for this rope is acceptable.



## FEATURES

<b>Materials</b>	Polyamide (nylon)
<b>Construction</b>	12 strand braided with a braided cover of polyamide
<b>Treatment</b>	Marine finish
<b>Colour of Rope</b>	White with green marker
<b>Approx. Spec. Density</b>	1,14 non-floating
<b>Melting point</b>	215°C
<b>Abrasion resistance</b>	Excellent
<b>U.V. resistance</b>	Excellent, due to jacket
<b>Temperature resistance</b>	80°C max continuous
<b>Chemical resistance</b>	Reasonable; acids, oxidisers & solvents will affect nylon
<b>Dry &amp; wet conditions</b>	Wet strength $\pm$ 5% lower than dry strength
<b>Weight</b>	$\pm$ 5%
<b>Diameter</b>	$\pm$ 2%

Dia mm	Circ "	Weight kg/100m	MBL SINGLE				MBL GROMMET			
			DRY		WET		DRY		WET	
			tf	kN	tf	kN	tf	kN	tf	kN
80	10	397	147	1442	140	1370	250	2452	237	2329
88	11	481	178	1746	169	1659	303	2969	287	2820
96	12	572	208	2040	198	1938	354	3469	336	3295
104	13	671	249	2443	237	2321	423	4153	402	3945
112	14	779	288	2825	274	2684	490	4803	465	4563
120	15	893	327	3208	311	3047	556	5453	528	5181
128	16	1020	368	3610	350	3430	626	6137	594	5830
136	17	1150	419	4110	398	3905	712	6988	677	6638
144	18	1280	470	4611	447	4380	799	7838	759	7446

**BEXCO**  
OUR ROPE, YOUR SOLUTION

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