

## TIPTO® ROPE FOR ARCTIC MOORINGS



Mooring at sub-zero temperatures involves many challenges, not least of which is safe rope handling. The Tipto® range of fibre mooring ropes from Lankhorst Ropes are characterised by their strength and ease of handling in arctic conditions. In addition to outstanding service life, the ropes provide green benefits too through Lankhorst's rope recycling programme.

### MOORING IN A COLD CLIMATE

Tipto® mooring ropes include: Tipto® Winchline, Tipto® Eight, and Tipto® Twelve. The ropes are made from high-performance Tipto® yarns, with a specific gravity of 0.94. This ensures that Tipto ropes will float indefinitely, minimizing the risk of the rope becoming entangled in the vessel's propeller. Moreover, the Tipto® yarn is not affected by the environment in any way. The rope's breaking load is not diminished under wet conditions. And UV-resistant additives prevent the rope from deteriorating in sunlight.

- Tipto® material is water repellent, preventing water from being absorbed into the rope's interior where it could freeze into crystals under sub-zero conditions and damage the rope from within.
- With excellent abrasion resistance and low friction coefficient, Tipto® rope construction reduces the abrasive contact between rope and vessel (fairleaders and rollers), between rope and rope (on the drum), as well as, yarn to yarn (internal abrasion).
- Outstanding temperature resistance - low temperature (-20°C) has no effect on the MBL of Tipto® Twelve. Moreover, sub-zero temperatures followed by hot steam washing cleaning has no significant effect on the rope's MBL.

### LANKHORST - MOORING SPECIALIST

Working with Lankhorst Ropes gives you access to over 200 years' experience of maritime ropes. We are not only an EU-based, rope manufacturer and supplier, but also a problem solver. By specialising in high-performance ropes, Lankhorst can provide top-quality products, tailor-made to the customer's specifications, including end-fittings.

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# TIPTO® EIGHT



-  CONSTRUCTION 8 strand plaited
-  ELONGATION 14%

Art. number	Circ. (inches)	Diameter (mm)	Weight		Minimum Breaking Force		
			(kg/100m)	(lbs/100 ft)	(kN)	(Mt)	(lbs)
111.693	5	40	75,6	51	269	27,43	60.474
111.721	5 1/2	44	92,4	62	321	32,73	72.164
111.695	6	48	109	73	378	38,54	84.978
111.737	6 1/2	52	128	86	441	44,97	99.141
111.697	7	56	149	100	508	51,80	114.203
111.698	7 1/2	60	171	115	578	58,94	129.940
111.699	8	64	194	130	651	66,38	146.351
111.700	8 1/2	68	220	148	731	74,54	164.335
111.701	9	72	246	165	814	83,00	182.994
111.703	10	80	305	205	992	101,15	223.010
111.735	11	88	369	248	1.180	120,32	265.275
111.705	12	96	438	294	1.400	142,76	314.733
111.741	13	104	515	346	1.620	165,19	364.190
111.743	14	112	596	400	1.870	190,68	420.393
111.691	15	120	686	461	2.130	217,20	478.843
111.744	16	128	779	523	2.410	245,75	541.790
111.746	17	136	880	591	2.710	276,34	609.232
111.739	18	144	987	663	3.030	308,97	681.171

Diameter, weight and MBF (as well as other mechanical and physical properties) are determined according ISO 2307:2010. The MBF refers to the breaking strength in the rope / wire itself, without splices or any other form of termination that can be formed with or without the use of accessories / fittings.

# TIPTO® TWELVE



-  CONSTRUCTION 12 strand plaited
-  ELONGATION 14%

Art. number	Circ. (inches)	Diameter (mm)	Weight		Minimum Breaking Force		
			(kg/100m)	(lbs/100 ft)	(kN)	(Mt)	(lbs)
111.516	2	16	12,1	8	48	4,89	10.791
111.520	2 1/2	20	18,9	13	72,8	7,42	16.366
111.524	3	24	27,3	18	103	10,50	23.155
111.528	3 1/2	28	37,3	25	137	13,97	30.799
111.532	4	32	53	36	177	18,05	39.791
111.536	4 1/2	36	66	44	222	22,64	49.908
111.540	5	40	75,6	51	269	27,43	60.474
111.544	5 1/2	44	92,4	62	321	32,73	72.164
111.548	6	48	109	73	378	38,54	84.978

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# TIPTO® WINCHLINE



-  CONSTRUCTION 7 strand + jacket
-  ELONGATION 8,5%
-  A3 SPLICE

Art. number	Circ. (inches)	Diameter (mm)	Weight		Minimum Breaking Force		
			(kg/100m)	(lbs/100 ft)	(kN)	(Mt)	(lbs)
111.952	4 1/2	36	74	50	248	25,29	55.753
111.953	5 1/4	42	98	66	340	34,67	76.435
111.934	5 3/4	46	115	77	425	43,34	95.544
111.956	6	48	125	84	472	48,13	106.110
111.935	6 1/4	50	133	89	512	52,21	115.102
111.936	6 3/4	54	150	101	598	60,98	134.436
111.896	7	56	160	108	640	65,26	143.878
111.937	7 1/4	58	167	112	682	69,54	153.320
111.967	7 1/2	60	184	124	730	74,44	164.111
111.966	7 3/4	62	190	128	780	79,54	175.351
111.938	8	64	203	136	850	86,67	191.088
111.939	8 1/2	68	221	149	934	95,24	209.972
111.970	8 3/4	70	240	161	990	100,95	222.561
111.940	9 1/4	74	256	172	1.100	112,17	247.290
111.941	10	80	355	239	1.270	129,50	285.507
111.942	10 1/4	82	380	255	1.350	137,66	303.492
111.898	10 1/2	84	395	265	1.420	144,80	319.229

[Larger diameters on request](#)

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-  SPECIFIC GRAVITY 0,93 (floating)
-  UV-RESISTANCE very good
-  ABRASION RESISTANCE very good
-  CHEMICAL RESISTANCE good
-  MELTING POINT approx. 140 °C

-  TOLL VALUE 70,7%
-  COLOUR yellow
-  MARKER YARN orange
-  WATER ABSORPTION 0%