

Lankhorst|*Ropes*

**THROUGH LIFE,
FOR LIFE**



MA

MARITIME

CRUISE.

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LANKHORST ROPES... THE VITAL CONNECTION

Lankhorst Ropes is a world leading supplier of synthetic fibre and steel wire ropes for the maritime and offshore industries. As a Royal Lankhorst Euronete Group company, Lankhorst Ropes is also part of the world's largest steel wire manufacturer, WireCo WorldGroup.

Founded in 1803, Lankhorst Ropes has over 200 years' experience in the manufacture and supply of high performance ropes for mooring and towing applications.

Our core business is the development and production of high performance, synthetic and steel wire ropes for mooring and anchor systems, as well as towing and crane hoisting and luffing applications. We are committed to setting the standard for maritime ropes through our leading rope brands - TIPTO® 'Strong & Durable' family, EURO 'Strong & Stretch' family and LANKO® 'Strong & Light' family, which provide an optimal combination of breaking strength, life-time safety and ease of handling. All our ropes are produced in accordance with OCIMF recommendations and ISO standards.

As a supplier of steel wire ropes, Lankhorst Ropes has direct access to WireCo's large steel wire manufacturing resource and leading wire rope brands, like Casar ropes. Our design team has many years' experience in applications using both synthetic and steel ropes. Lankhorst offers a one-stop shop for synthetic and steel wire ropes to shipping and offshore companies globally; and we are the key player for new build ships.

RELIABILITY AND SAFETY

Lankhorst Ropes is fully certified according to ISO 9001:2008. Quality is central to our business ethos, ensuring you benefit from the highest quality products and services. Our factories for both steel wire and fibre ropes are approved by many IACS members, such as Lloyds, DNV/GL, BV and ABS. In addition, Lankhorst Ropes incorporates features like higher visibility, traceability, snap back protection and lower weight in their ropes, making them easier and safer to use.

INNOVATION AND HIGH PERFORMANCE

Lankhorst Ropes has a reputation for excellence in product innovation. Multi-award winning rope innovations, for example, the TIPTO® WINCHLINE anti-snap back feature received the 'Innovation in Ship Operations' award from SEATRADE in 2013, have led the industry in rope handling and safety. Lankhorst Ropes is leader in providing extraordinary solutions in terms of breaking strength, service life and ease of rope handling.

SERVICE AND DELIVERY

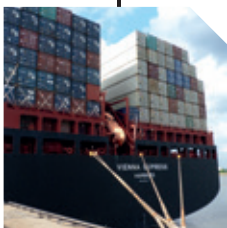
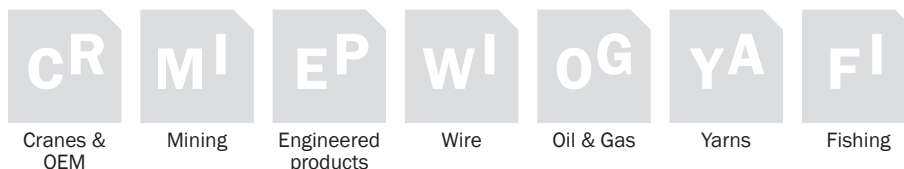
Lankhorst Ropes maintains stock points at strategic locations and main ports worldwide. Thanks to our widespread network and global presence, you are ensured continuity of supply, fast service and short delivery times. Our global network of stock points and local sales offices includes Algeciras, Bilbao, Brisbane, Cape Town, Dordrecht (NL), Dubai, Durban, Fujairah, Houston, Panama, Perth, Retford (UK), Rio de Janeiro, Rotterdam, Singapore and Sneek (NL).

**PARTNER AND PROBLEM SOLVER**

Lankhorst Ropes develops, manufactures and supplies a broad range of ropes directly from stock. Besides fast supply of standard items and rope configurations, Lankhorst Ropes has a dedicated confectioning centre to meet the needs of different market segment demands for specialized and tailor made solutions. In close consultation with our clients, we can bring nearly any desired product to market.

SUSTAINABLE AND ENVIRONMENTALLY FRIENDLY

Lankhorst Ropes is committed to sustainability in its products and operations, conserving energy and natural resources wherever possible. We introduced the maritime rope industry's first recycling scheme for retired ropes, for use in moulded public furniture, poles and planks, for example. It is an integral part of our sustainability policy and helps many of our partners enhance their environmental policies.

**MARITIME****DRY CARGO****WET CARGO****TUG & TOWING****CRUISE****DREDGING****INLAND SHIPPING**

LANKHORST ROPES FOR CRUISE VESSELS



**OUTSTANDING
SERVICE LIFE
PERFORMANCE
AND, AS A
RESULT, LOW
TOTAL COST OF
OWNERSHIP.**

Lankhorst Ropes offers a one-stop shop for a broad range of fibre and steel wire ropes for hoisting, luffing, and mooring for both river and ocean cruise vessels. They offer outstanding service life performance and, as a result, low total cost of ownership and minimal downtime.

One of Lankhorst Ropes' greatest strengths is the ability to draw on the expertise and applications experience of its staff to find a rope to meet the customer's needs. Lankhorst offers a range of materials and rope handling tools that can be deployed to meet the requirements of a wide variety of applications and vessels.

Ease of handling, and rope safety are the trademark of Lankhorst Ropes as shown by Lankhorst's award winning innovations, the A3 splice and anti-snap back braided jacket. The A3 splice makes ropes easier to handle as there is no doubling of the rope at the

splice and has 100% efficiency meaning there is no loss of strength as a result of splicing the rope. A non-loadbearing braided jacket brings several benefits including protecting the rope from abrasion and minimising the chance of snapback, increasing the safety of the vessel's passengers and crew.

Manufactured in the EU using the latest in-house yarn extrusion and rope production techniques, rope construction is optimised to suit the application. All Lankhorst ropes are manufactured from premium materials, tested to OCIMF recommendations, and offer full rope traceability. Moreover, as a leading rope manufacturer we work closely with our suppliers such as DSM Dyneema, to ensure the highest quality standards from raw materials, through manufacture, delivery and installation of the finished rope.

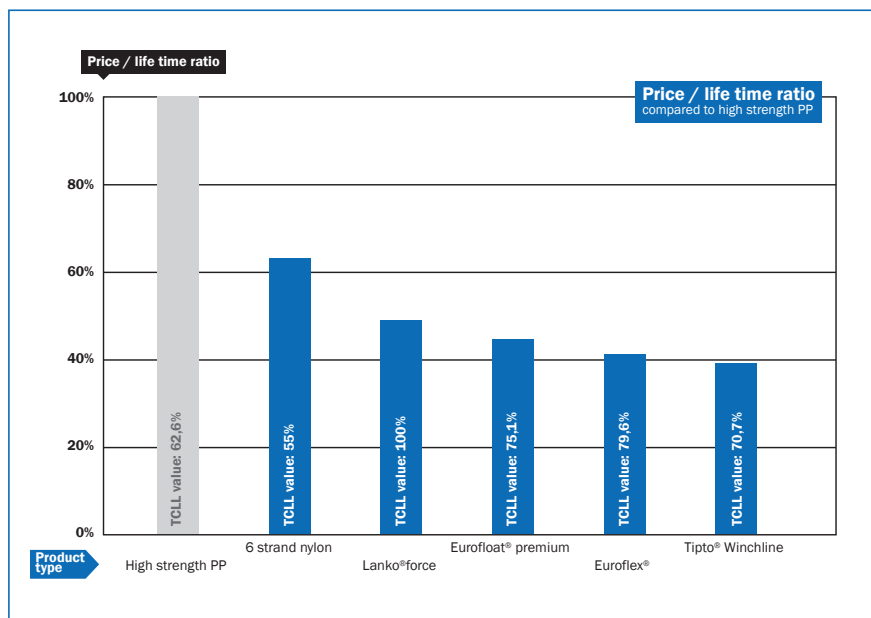
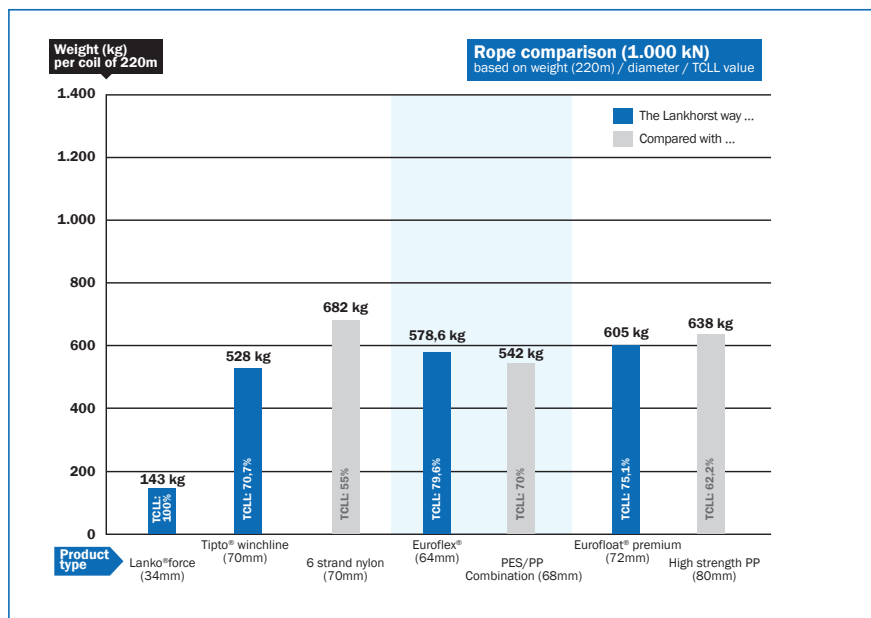
Consistent rope performance is vital during mooring and towing. Using Lankhorst ropes, vessel operators are assured that their ropes are made with the greatest materials consistency to provide the same elongation, and service life, enabling more efficient rope management and supply through Lankhorst Ropes' extensive global stock point network. In this way, the risk of mixed mooring is eliminated.

Lankhorst has a dedicated fibre rope R&D centre providing the technical know-how needed to produce award-winning rope innovations in rope handling and safety. In-built anti-snap back designs reduce the risks to crew, as does the A3 splice that makes rope handling easier and safer during mooring and towing.

Lankhorst Ropes 'Your' partner for new build and replacement ropes. The breadth and depth of our range of fibre and steel wire ropes, backed by a global network of stock points, means we are able to provide complete fleet supply ensuring your cruise shipping operations remain efficient and cost-effective.

OUR ROPE SYSTEM

± 1.000 kN coil of 220m	Lanko®force	Tipto® winchline	Euroflex®	Eurofloat® premium
Density	0,98	0,93	1,14	0,98
Melting point (°C)	147 °C	140 °C	165-265 °C	165-260 °C
Dry / wet (%)	100%	100%	100%	100%
Used Rope elongation (%)	2,2%	8,5%	12,5%	15%
UV resistance	excellent	very good	good	good
TCLL value (%)	100%	70,7%	79,6%	75,1%





‘THROUGH LIFE, FOR LIFE’ SERVICE MODEL

The cost and operational demands on cruise operators have never been greater. Maintaining a competitive edge is often the sum of marginal gains, small improvements, which when taken together can make a big difference. Lankhorst Ropes' Through Life, For Life service is designed to do just this.

Lankhorst Ropes: Through Life, For Life gives operators a portfolio of rope service life support and sustainability benefits unmatched in the industry.

From development of a mooring plan to rope selection and management through predictive service-life rope testing and training, Lankhorst provides complete 'through life' rope service – we want you to experience the benefit of working with our ropes in terms of longer rope service-life, easier handling and safe operation.

And then we go further. Commitment to Green manufacture combined with a longer lasting rope service-life, and ultimately rope recycling, translates into levels of sustainability that make a significant contribution to your environmental policies. Looked at in this way, life enhancing, sustainability is built-in with Lankhorst Ropes: Through Life, For Life; and it makes good business sense too!

ROPE SELECTION

Making the correct rope selection is vital. The cost-effectiveness and safety of shipping operations are dependent on selecting the correct rope. Lankhorst takes a holistic approach to prevent early failure of the rope:

- Analysis of ship route and mooring conditions
We will jointly go through all details of the trading route (if known) including type of mooring, expected swell conditions, possible currents and risks of surging.
- Analysis of the mooring plan
We will jointly go through all details of the rope route starting from the winch, and calculated winch capacity, to analysis of D/d ratios.



ROPE SELECTION CRITERIA

Base on the holistic analyses, Lankhorst will recommend a rope to meet the desired properties based on:

- Elongation properties
- Rope flexibility/stiffness
- Break load
- Chafing gear
- Safety risks
- Floatability
- Service Life expectations
- Environmental conditions
- International standards

INSTALLATION OF ROPE AND CREW TRAINING

Lankhorst Ropes is committed to equipping crew with the knowledge and skills needed to ensure safe use of fibre ropes and maximum service life. Specifically, we provide:

- Training on rope handling
- Splicing instructions
- Installation on new (@shipyard) or existing (@ports) vessels
- Hardware inspection including all on-vessel equipment

INSPECTION/MAINTENANCE/TRAINING

Regular inspection is important in ensuring maximum rope service life. In addition to the crew training on rope handling and inspection, Lankhorst Ropes will make periodic visits to the vessel in port to undertake:

- Hardware inspection
- Full length rope inspection
- Update crew training
- Produce an Inspection report

RESIDUAL STRENGTH TESTING

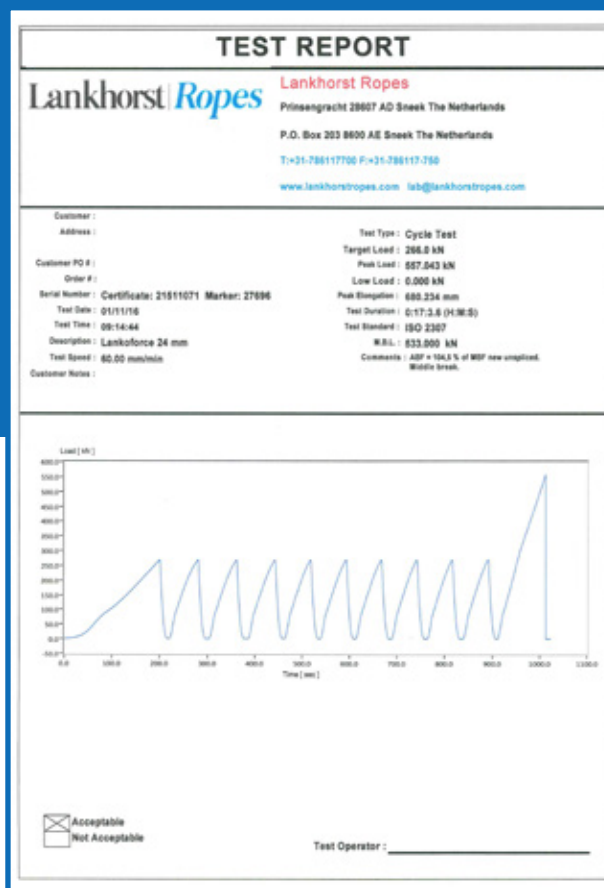
Lankhorst Ropes will provide a continuous residual strength testing program in order to assist in determining the best moment to change the rope end-to-end in order to ensure the best economical life time and to optimise safety on board. We believe this should be based on mooring hours, i.e. the number of hours a line has been used in mooring the vessel. This can be quantified by vessel and reported back to the manufacturer. Other factors which ought to be taken into consideration are local environmental conditions at the ports and terminals.

VISUAL INSPECTION

The rope-sample is visually inspected. Photos are taken for the final residual strength test report before pulling the sample to destruction.

TEST REPORT

Each sample will get its own test certificate as illustrated.

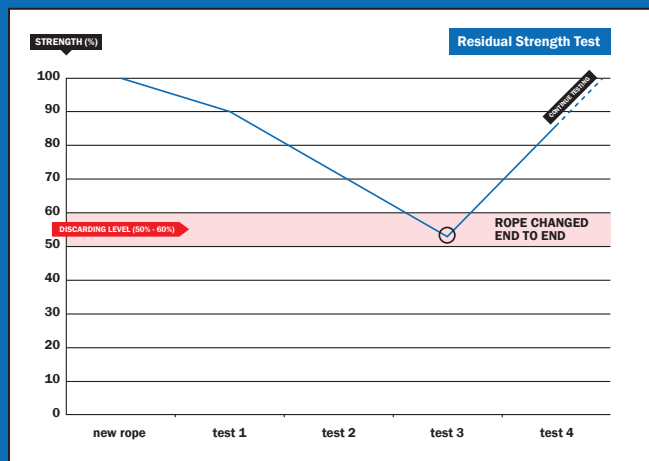


DEVELOPING SAFE RETIREMENT CRITERIA

By a continuous process of analysis and testing, it is possible to determine the most economical and safest points for ending rope usage and ultimately rope retirement.

THROUGH LIFE, FOR LIFE

Longer rope service-life,
easier handling, safe
operation, green
manufacture and rope
recycling.



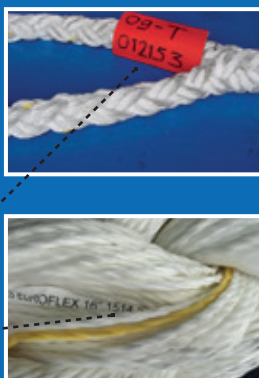
RECYCLING OF ROPES

The two testing and recycling programmes can be combined. Ropes which are returned for testing and deemed unusable, can be used for recycling into other polymer products. On the image you see an offshore vessel with KLP® Deck Covers made by Lankhorst Engineered Products.

Proof of participation in the recycling programme is shown by a logo on the Work Certificate.

The recycling programme is an exclusive programme. It is not meant for ad hoc single rope returning for recycling as an alternative to disposal by our customers. The intention is that the whole fleet's ropes will be recycled in time.

Check the rope selection pages to find out which products participate in the recycling programme.



ROPE TRACEABILITY

Record keeping is essential for the safe use of mooring and towing ropes. Lankhorst high performance ropes carry a unique Product Identification Code (PIC). This PIC code is printed on a tape inside the rope and on the protective barrier in the eye. It corresponds with the factory certificate number for each rope, providing an effective way of managing rope use and maintenance.

24/7 ACCESS TO ROPE CERTIFICATES

Lankhorst Ropes is able to offer 24/7 access to fibre rope and steel wire rope certificates, regardless of the time zone.

Certificates may be mislaid during filing or transportation but can be required immediately to trace and identify ropes. By providing direct access to rope certificates, Lankhorst customers will be able to instantaneously check all of their ropes' details including construction, diameter, length, minimum breaking load and end termination.

ROPE SOLUTION OVERVIEW

Mooring lines

single



LANKO®FORCE
ø 34mm 143kg / 220m TCTL: 100%
MBF: 991 kN

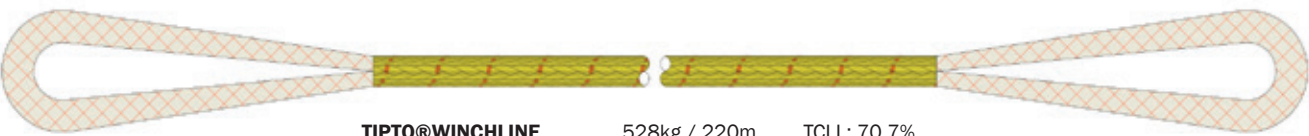
EWL tails of EUROFLEX®
ø 72mm 53,7 kg / 11m TCTL: 79,6%
MBF: 1.270 kN

double



LANKO®FORCE
ø 34mm 143kg / 220m TCTL: 100%
MBF: 991 kN

EWL tails of EUROFLEX®
ø 56mm 46 kg / 11m TCTL: 79,6%
MBF: 1.332 kN



TIPTO®WINCHLINE
ø 70mm 528kg / 220m TCTL: 70,7%
MBF: 990 kN



EUROFLOAT® PREMIUM
ø 72mm 605kg / 220m TCTL: 75,1%
MBF: 1.000 kN



EUROSTEEL
ø 80mm 638kg / 220m TCTL: 62,6%
MBF: 1.009 kN

Total weight	Elongation of used rope at break	Features
196kg	LANKO®FORCE: 2,2% EUROFLEX®: 12,5%	• 7 times lighter than steel wire rope • Easier rope handling reduces mooring time • Reduced snap-back risk due to low elongation of LANKO®FORCE • High rope flexibility
189kg		
528kg	8,5%	• Excellent form stability on split drum winch • Outstanding abrasion resistance due to TIPTO® jacket • Improved safety due to non-load bearing jacket and bright yellow colour • A3 splice with 100% efficiency
605kg	15%	• Floating rope, reduced risk of entangling in propeller • High TCTL value • Good tension – tension fatigue resistance • Good heat resistance
638kg	14%	• Economical floating solution • 25% stronger than conventional 100% PP ropes



ROPE SELECTION

SYNTHETIC ROPES

HIGH MODULUS ROPES

LANKO®FORCE



12 strand braided rope, made of Dyneema® yarns. LANKO®FORCE is an excellent alternative for heavy and lumbbersome steel wire ropes in situations requiring manual handling of the rope. It is stronger than conventional steel wire rope, yet the corresponding weight is 7 times lower. The improved handling characteristics are especially suitable for towing and mooring applications. Another important benefit of LANKO®FORCE is that the rope is floating. Moreover, when replacing fibre rope, the reduction in rope diameter can lead to substantial savings in the weight and size of the mooring winches, for example, when incorporated in the design of a new build vessel the cost saving is substantial.

	SPECIFIC GRAVITY	0,98 (floating)
	UV-RESISTANCE	excellent
	ABRASION RESISTANCE	excellent
	CHEMICAL RESISTANCE	good
	MELTING POINT	approx. 147 °C
	CONSTRUCTION	12 strand plaited
	TCLL VALUE	100%
	COLOUR	yellow
	WATER ABSORPTION	0%
	ELONGATION	2,2%
	QUICK BURY SPLICE	

Art. number	Circ. (inches)	Diameter (mm)	Weight (kg/100m) (lbs/100 ft)		Minimum Breaking Force (kN) (Mt) (lbs)		
092.020	2 1/2	20	21,5	14	374	38,14	84.079
092.022	2 3/4	22	28	19	450	45,89	101.164
092.024	3	24	33,5	23	533	54,35	119.823
092.026	3 1/4	26	37,5	25	612	62,41	137.583
092.028	3 1/2	28	43,5	29	701	71,48	157.591
092.030	3 3/4	30	51,5	35	789	80,45	177.374
092.032	4	32	59	40	887	90,45	199.406
092.034	4 1/4	34	65	44	991	101,05	222.786
092.036	4 1/2	36	71	48	1.076	109,72	241.894
092.038	4 3/4	38	80	54	1.191	121,45	267.747
092.040	5	40	88,5	59	1.314	133,99	295.399
092.044	5 1/2	44	109	73	1.559	158,97	350.477
092.048	6	48	126	85	1.853	188,95	416.571
092.052	6 1/2	52	149	100	2.160	220,26	485.587
092.056	7	56	176	118	2.490	253,91	559.774
092.060	7 1/2	60	202	136	2.820	287,56	633.961

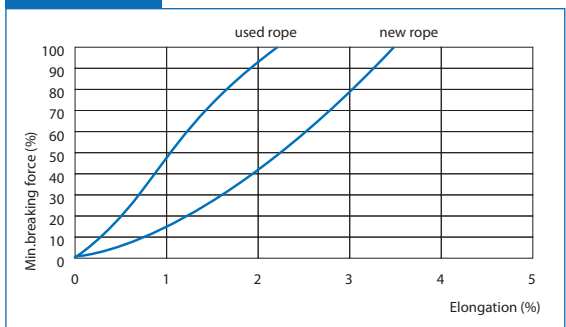
Other diameters on request

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.

optional:



ELONGATION:



WINCHLINES

TIPTO® WINCHLINE



A dedicated floating winch line developed especially for self tensioning winches. This load-bearing 7 strand core combines high strength and relatively low elongation. The non-load-bearing braided jacket provides protection of the core for longer service life, and increases crew-safety by minimizing the risk of snap-back. The mooring efficiency of the vessel is enhanced by the ease of handling of the rope due to its low weight and ability to float. TIPTO® WINCHLINE does not lose its strength when wet.

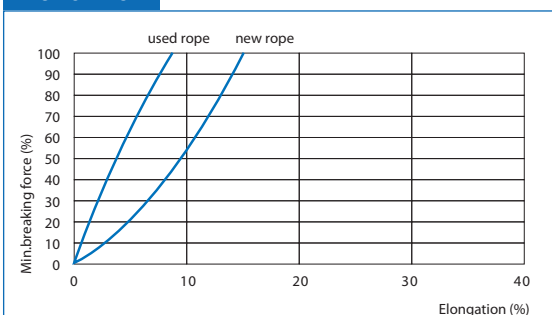
	SPECIFIC GRAVITY	0,93 (floating)		TCLL VALUE	70,7%
	UV-RESISTANCE	very good		COLOUR	yellow
	ABRASION RESISTANCE	very good		MARKER YARN	orange
	CHEMICAL RESISTANCE	good		WATER ABSORPTION	0%
	MELTING POINT	approx. 140 °C		ELONGATION	8,5%
	CONSTRUCTION	7 strand + jacket		A3 SPLICE	

Art. number	Circ. (inches)	Diameter (mm)	Weight (kg/100m) (lbs/100 ft)		Minimum Breaking Force (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

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.

ELONGATION:



EUROFLOAT® PREMIUM



Using our latest in-house extrusion technology, Lankhorst has developed EUROFLOAT® PREMIUM rope to meet the requirements of today's modern tanker fleet. This floating high performance rope is constructed from high strength polyolefin and polyester yarns. It is manufactured to the latest EN and ISO standards, and complies with OCIMF recommendations. The rope's floating characteristic makes it a safe rope to work with, while its high TCLL value ensures excellent fatigue resistance.

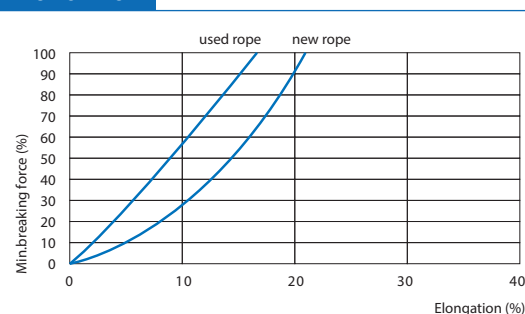
	SPECIFIC GRAVITY	0,98 (floating)		TCLL VALUE	75,1%
	UV-RESISTANCE	good		COLOUR	off white
	ABRASION RESISTANCE	very good		MARKER YARN	two green markers
	CHEMICAL RESISTANCE	good		WATER ABSORPTION	0,1%
	MELTING POINT	approx. 165 °C/ 260 °C		ELONGATION	15%
	CONSTRUCTION	8 strand plaited			

SOFT ROPES

Art. number	Circ. (inches)	Diameter (mm)	Weight (kg/100m) (lbs/100 ft)		Minimum Breaking Force (kN) (Mt) (lbs)		
152.632	4	32	53	36	207	21,11	46.535
152.636	4 1/2	36	67	45	259	26,41	58.226
152.640	5	40	85	57	324	33,04	72.838
152.644	5 1/2	44	99	67	377	38,44	84.753
152.648	6	48	120	80	456	46,50	102.513
152.652	6 1/2	52	141	95	534	54,45	120.048
152.656	7	56	162	109	613	62,51	137.808
152.660	7 1/2	60	188	126	701	71,48	157.591
152.664	8	64	216	145	799	81,47	179.622
152.669	8 1/2	68	245	165	900	91,77	202.328
152.672	9	72	275	185	1.000	101,97	224.809
152.676	9 1/2	76	305	205	1.098	111,96	246.840
152.680	10	80	339	218	1.205	122,87	270.895
152.688	11	88	411	276	1.470	149,90	330.469
152.696	12	96	490	319	1.735	176,92	390.044

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.

ELONGATION:



Made of:
84% polyolefin
16% polyester

EUROFLEX® MOORING TAIL



Mooring tails absorb shock/energy within the mooring system. The EUROFLEX® MOORING TAILS surpass nylon tails in quality, as a result the energy absorption is greater, and the rope remains elastic for longer. Moreover, the rope does not lose a large portion of its dry MBF when wet. As the EUROFLEX® MOORING TAILS' strength is higher than that of nylon, a smaller diameter of rope can be used, providing better handling. Made of polyester and polyolefin composite yarns, the standard length is 11 m (Effective Working Length). For those circumstances where more stretch is required, the EUROFLEX® MOORING TAILS are also available in 22 m EWL. Both versions are fitted with two protected and spliced eyes of 2 m and 1 m respectively.

OCIMF recommends mooring tails with a MBF of 125% related to the steel wire rope mooring line. Both versions are fitted with two protected and spliced eyes of 2 m and 1 m respectively.

	SPECIFIC GRAVITY	1,14		CONSTRUCTION	8 strand plaited
	UV-RESISTANCE	good		TCLL VALUE	79,6%
	ABRASION RESISTANCE	very good		COLOUR	white
	CHEMICAL RESISTANCE	good		MARKER YARN	yellow
	MELTING POINT	approx. 165 °C / 265 °C		WATER ABSORPTION	<0,5%
				ELONGATION	12,5%

Art. number	Circ. (inches)	Diameter (mm)	Weight		Minimum Breaking Force		
			(kg/100m)	(lbs/100 ft)	(kN)	(Mt)	(lbs)
EWL: 11m							
152.448	6	48	22,6	50	583	59,45	131.064
152.450	7	56	32,5	72	784	79,94	176.251
152.447	7 1/2	60	37,4	82	896	91,37	201.430
152.449	7 3/4	62	40,1	88	955	97,38	214.694
152.451	8	64	42,5	94	1.010	102,99	227.058
152.454	8 1/2	68	48	106	1.140	116,25	256.284
152.452	9	72	53,7	118	1.270	129,50	285.509
152.455	9 1/2	76	63,4	140	1.410	143,78	316.982
152.453	10	80	70,4	155	1.550	158,05	348.456
152.446	10 1/2	84	77,6	171	1.710	174,37	384.425
152.456	11	88	85,1	188	1.870	190,68	420.395
152.444	12	96	101,2	223	2.210	225,35	496.830

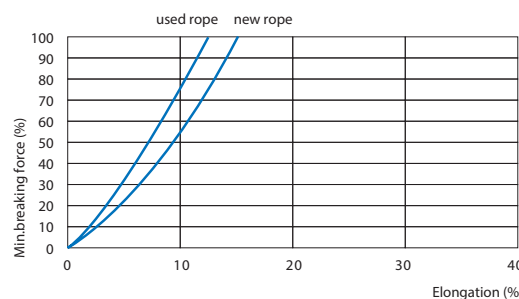
EWL: 22m							
152.462	7 1/2	60	61,6	136	896	91,37	201.430
152.460	9	72	88,5	195	1.270	129,50	285.509
152.461	10	80	113,4	250	1.550	158,05	348.456
152.463	11	88	137,2	302	1.870	190,68	420.395
152.465	12	96	163	359	2.210	225,35	496.830

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.

Made of:

47% polyolefin
53% polyester

ELONGATION:



TIPTO®EIGHT

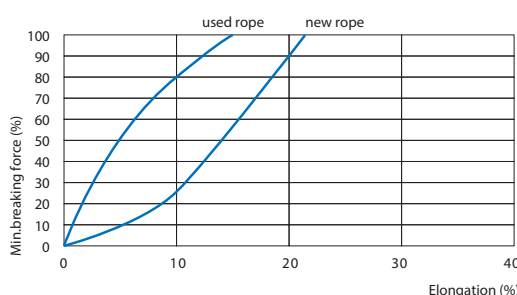


A high-performance mooring rope, TIPTO®EIGHT's strength, abrasion resistance and energy absorption ensure a long service life and low cost of ownership. The rope's small diameter and low weight make handling easier on board. As TIPTO®EIGHT is a floating rope, the risk of getting the rope caught in the ship and tug propeller is minimal, thus avoiding costly downtime.

Art. number	Circ. (inches)	Diameter (mm)	Weight (kg/100m) (lbs/100 ft)		Minimum Breaking Force (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.

ELONGATION:



	SPECIFIC GRAVITY	0,93 (floating)		TCLL VALUE	70,7%
	UV-RESISTANCE	very good		COLOUR	yellow
	ABRASION RESISTANCE	very good		MARKER YARN	orange
	CHEMICAL RESISTANCE	good		WATER ABSORPTION	0%
	MELTING POINT	approx. 140 °C		ELONGATION	14%
	CONSTRUCTION	8 strand plaited			





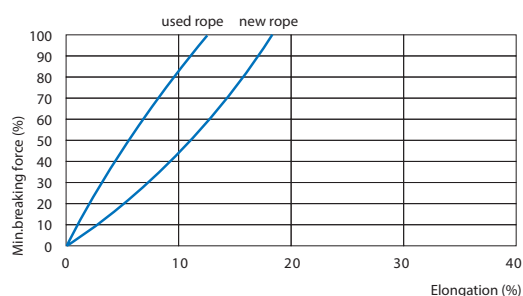
EUROSTEEL

An all purpose 8 strand plaited mooring rope made from high strength monofilament fiber. The EUROSTEEL rope does not absorb water, has a high breaking load in relation to the diameter of the rope, whilst still floating. The EUROSTEEL rope is designed as general purpose rope and can be used for various applications, such as mooring and towing



	SPECIFIC GRAVITY	0,91 (floating)
	UV-RESISTANCE	good
	ABRASION RESISTANCE	good
	CHEMICAL RESISTANCE	good
	MELTING POINT	approx. 169°C
	CONSTRUCTION	8 strand plaited
	TOLL VALUE	62,6%
	COLOUR	black & white
	WATER ABSORPTION	0,1%
	ELONGATION	14%

ELONGATION:



Art. number	Circ. (inches)	Diameter (mm)	Weight (kg/100m)	Weight (lbs/100 ft)	Minimum Breaking Force (kN)	Minimum Breaking Force (Mt)	Minimum Breaking Force (lbs)
122.532	4	32	46	31	180	18,35	40.538
122.536	4 1/2	36	58,5	39	227	23,15	51.113
122.540	5	40	72	48	276	28,14	62.128
122.544	5 1/2	44	88	59	327	33,34	73.584
122.548	6	48	104	70	383	39,05	86.142
122.552	6 1/2	52	122	82	445	45,38	100.022
122.556	7	56	142	95	509	51,90	114.342
122.560	7 1/2	60	163	110	583	59,45	131.086
122.564	8	64	185	124	660	67,30	148.270
122.572	9	72	234	157	825	84,13	185.503
122.580	10	80	290	195	1.009	102,89	226.922
122.588	11	88	351	236	1.215	123,89	273.188
122.596	12	96	417	280	1.431	145,92	321.657

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.

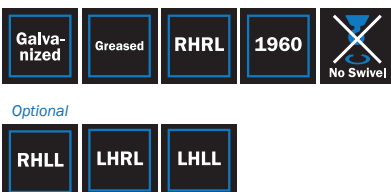
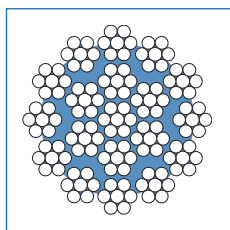


STEEL WIRE ROPES



On cruise vessels, the majority of steel wire ropes are used to lower lifeboats - a very important application. They have to perform, no matter what. We carry three type of wire suitable for lifeboats: the 19 x 7 rotating resistant and the two non-rotating multi-stranded wires ropes: LANKO®FLEX and LANKO®PACK. Our controlled production process, and the materials used, ensure they are the highest quality steel wire ropes available. The levels of galvanization and internal / external lubrication used on these wires protects them against the harshest environmental conditions at sea. Moreover, the compacting process applied to LANKO®PACK wire rope adds to its breaking strength, providing an even higher guarantee of performance for this type of mission critical application.

19X7



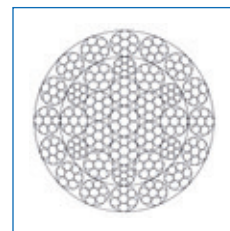
Art. number	Diameter (mm)	Weight (kg/100m) (lbs/100 ft)		Minimum Breaking Force (kN) (Mt) (lbs)		
281.088	4	6,3	4	10,3	1,05	2.316
281.089	5	9,7	7	16,1	1,64	3.619
281.090	6	13,9	9	23,1	2,36	5.193
281.091	7	18,8	13	31,5	3,21	7.081
281.096	8	25	17	41,1	4,19	9.240
281.097	9	32,3	22	52,1	5,31	11.713
281.087	10	39,6	27	64,3	6,56	14.455
281.098	11	48,3	32	77,8	6,56	17.490
281.099	12	56,6	38	92,6	7,94	20.817
281.101	13	66	44	109	11,12	24.504
281.102	14	75	50	126	12,86	28.326
281.103	15	88,7	60	145	14,80	32.597
281.104	16	102	69	165	16,84	37.093
281.117	18	129	87	208	21,22	46.760
281.111	19	145	97	232	23,67	52.156
281.129	20	159	107	257	26,22	57.776
281.120	22	193	130	311	31,73	69.916
281.130	24	227	153	370	37,76	83.179

Diameter, weight and MBF (as well as other mechanical and physical properties) are determined according to ISO 2408:2004 and EN 12385-4. 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.





LANKO®FLEX



Optional

Galva-
nized

Greased

RHLL

1960

Swivel

RHRL

LHRL

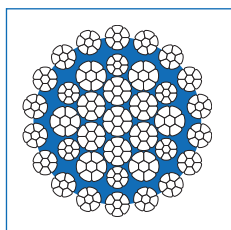
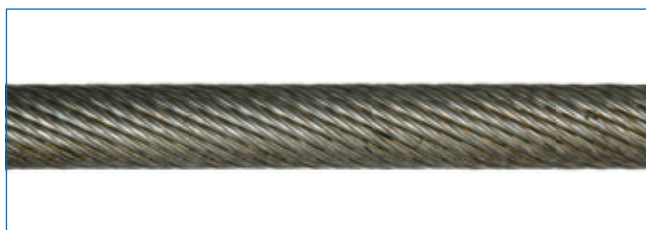
LHLL

Art. number	Diameter (mm)	Weight (kg/100m) (lbs/100 ft)		Minimum Breaking Force (kN) (Mt) (lbs)		
293.008	8	27,8	19	48,3	4,93	10.858
293.010*	10	42	28	76,2	7,78	17.130
293.012	12	61	42	104,4	10,65	23.470
293.013	13	75,6	51	122	12,45	27.427
293.014	14	85,9	58	148	15,10	33.272
293.015	15	98,5	66	170	17,35	38.218
293.016	16	111	75	193	19,69	43.388
293.018	18	143	96	244	24,90	54.853
293.019	19	157	105	272	27,76	61.148
293.020	20	174	117	302	30,82	67.892
293.022	22	213	143	365	37,24	82.055
293.024	24	254	171	435	44,39	97.792
293.026	26	299	201	510	52,04	114.653
293.028	28	343	230	592	60,41	133.087
293.030	30	394	265	679	69,29	152.645
293.032	32	445	299	773	78,88	173.777
293.034	34	505	339	872	88,98	196.033
293.036	36	573	385	978	99,80	219.863
293.038	38	634	426	1.090	111,22	245.042
293.040	40	696	468	1.210	123,47	272.019

Diameter, weight and MBF (as well as other mechanical and physical properties) are determined according to ISO 2408:2004 and EN 12385-4. 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.

* tensile strength: 2060 N/mm²

LANKO®PACK



Galva-
nized

Greased

RHLL

2160

Compact

Swivel

Optional

RHRL

LHRL

LHLL

Plastic Coated Core

Art. number	Diameter (mm)	Weight (kg/100m) (lbs/100 ft)		Minimum Breaking Force (kN) (Mt) (lbs)		
291.020	10	48	32,2	96,9	9,88	21.783
291.023	12	68,3	45,8	137,3	14,00	30.865
291.026	13	81,6	54,8	165,7	16,90	37.250
291.034	14	94,9	63,7	192,5	19,63	43.275
291.101	15	108,8	73	220,6	22,49	49.592
291.239	16	124,5	83,5	251,4	25,64	56.516
291.249	18	156,2	104,8	317,7	32,40	71.420
291.241	19	175,7	117,9	355,9	36,29	80.008
291.242	20	193	129,5	393	40,07	88.348
291.243	22	234,2	157,1	474,7	48,41	106.714
291.244	24	279	187,2	567,4	57,86	127.553
291.246	25	304,3	204,2	616,6	62,87	138.614
291.238	26	327	219,4	666,1	67,92	149.741
291.240	28	380,2	255,1	770,9	78,61	173.301
291.245	30	439,1	294,6	888,8	90,63	199.805
291.248	32	497,7	333,9	1.007,8	102,77	226.557
291.247	34	558,6	374,8	1.133	115,53	254.702
291.250	36	631,4	423,6	1.282,8	130,81	288.378
291.251	38	701,4	470,6	1.418,4	144,63	318.861
291.252	40	774,4	519,6	1.569	159,99	352.716

Diameter, weight and MBF (as well as other mechanical and physical properties) are determined according to ISO 2408:2004 and EN 12385-4. 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.

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FOR LIFE**



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