LANKHORST

THE VITAL CONNECTION

MA MARITIME

DREDGING.

WIRECO
A World Ahead

CONTENTS

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. 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' initial rope supply.

RELIABILITY AND SAFETY

Lankhorst Ropes is fully certified according to ISO 9001:2015. 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.

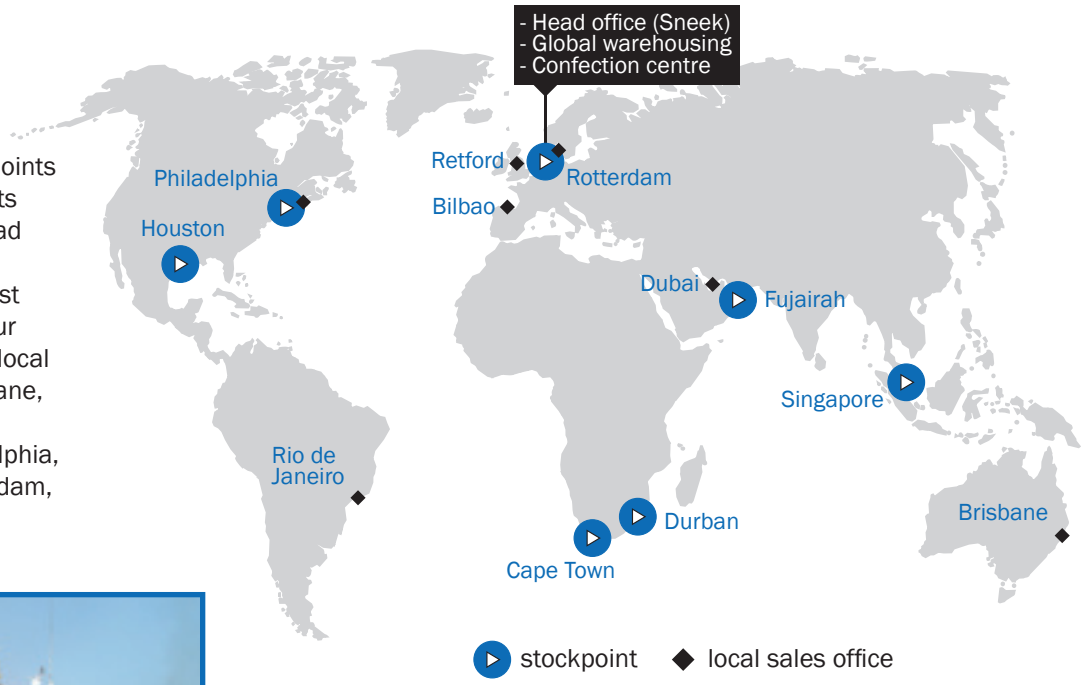
INNOVATION AND HIGH PERFORMANCE

Lankhorst Ropes has a reputation for excellence in product innovation. Lankhorst Ropes has developed several multi-award winning rope innovations, including the TIPTO® WINCHLINE anti-snap back feature which received the 'Innovation in Ship Operations' award from SEATRADE in 2013, which 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.

LANKHORST

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 Bilbao, Brisbane, Cape Town, Dordrecht (NL), Dubai, Durban, Fujairah, Houston, Philadelphia, Retford (UK), Rio de Janeiro, Rotterdam, Singapore and Sneek (NL).

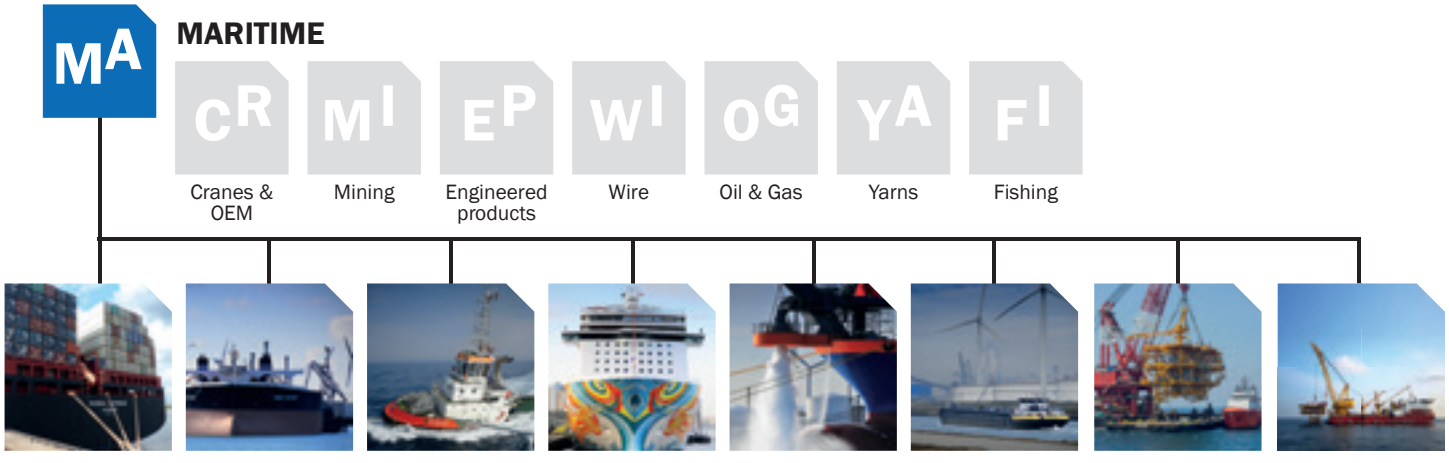


PARTNER AND PROBLEM SOLVER

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.



LANKHORST ROPES IN DREDGING

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

Lankhorst Ropes has many years experience in developing and supplying ropes for dredging vessels and operations. Dredging is vital for ports as they grapple with the demands of accommodating ever larger vessels. Also, in coastal areas dredging is essential in mitigating the effects of global warming.

As dredging companies take advantage of new opportunities in offshore wind installation and decommissioning, here too Lankhorst Ropes is able to provide the experience and industry-leading products needed to meet new handling challenges.

For hoisting, luffing, mooring, heavy lift and sling applications, Lankhorst Ropes offers a broad range of high quality of fibre ropes, as well as steelwire ropes such as the in-house special 8/10 strand compacted ropes with plastic core produced by Casar and Oliveira.

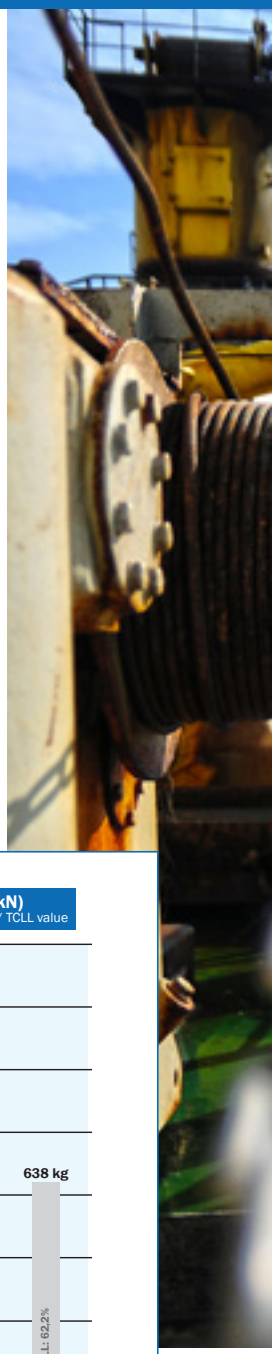
Ease of handling and rope safety are the trademark of Lankhorst Ropes. Manufactured in the EU using the latest in-house yarn extrusion and rope production techniques, the fibre rope construction is optimised to suit the application. All Lankhorst ropes are manufactured from premium material with full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

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. Lanko®force HMPE ropes produced with high quality Dyneema® fiber allow more and more steelwire ropes to be replaced with safer synthetic solutions.

LANKHORST

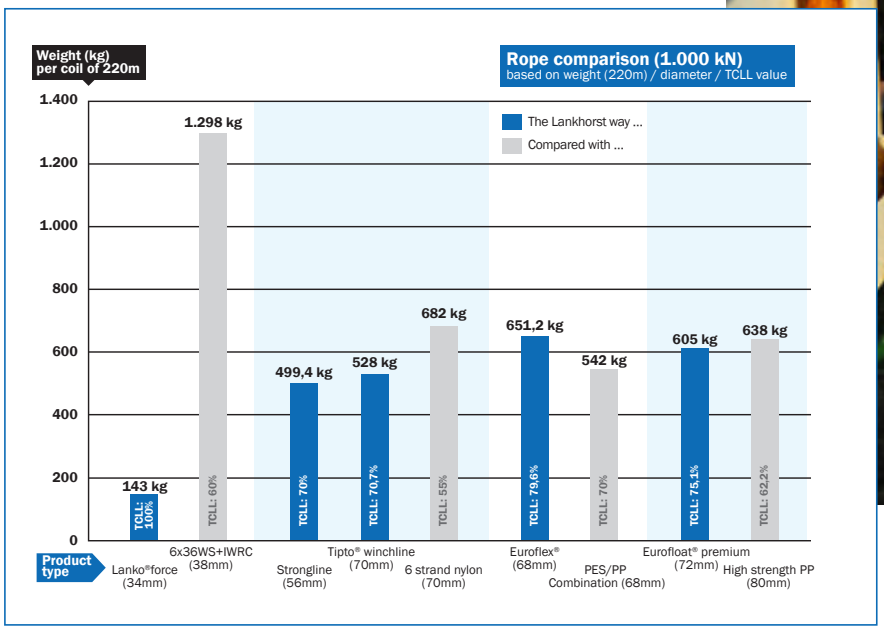
For synthetic heavy lift slings and round slings, Lankhorst Ropes has taken a lead in the development of slings for offshore engineered lifting operations, certified according to the requirements of DNVGL-OS-E303. A certificated rope sling is important in ensuring greater reliability, durability and extended service life which, in turn, translate into reduced sling maintenance costs, repairs and replacement.

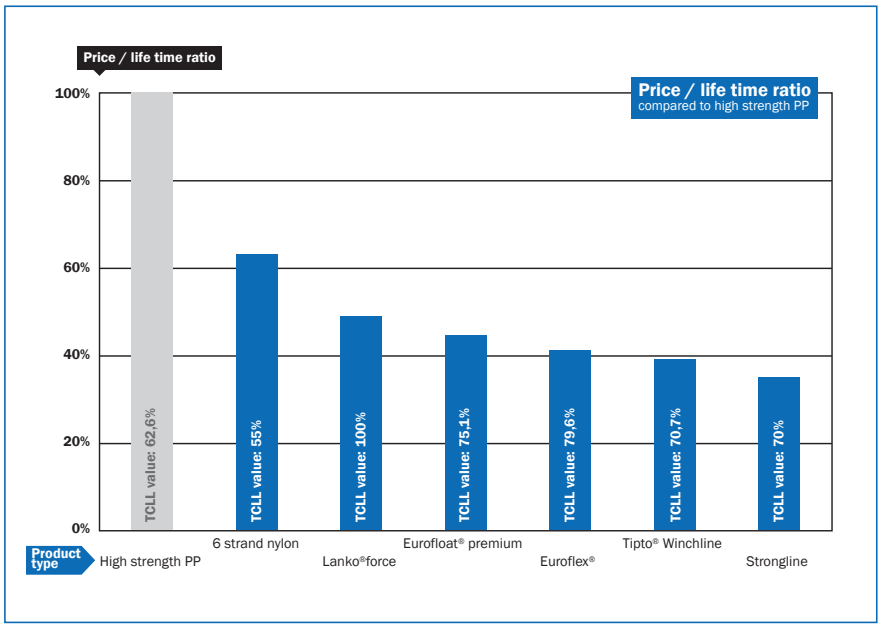
Lankhorst Ropes is your partner for new build, and replacement ropes. The breadth and depth of our range of fibre and steel wire ropes and associated hardware, backed by a global network of stock points, means we are able to provide complete fleet supply ensuring your operations remain efficient and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



OUR ROPE SYSTEM

± 1.000 kN coil of 220m	Lanko®force	Strongline	Tipto® winchline	Euroflex®	Eurofloat® premium
Density	0,98	1,38	0,93	1,14	0,98
Melting point (°C)	147 °C	265 °C	140 °C	165-265 °C	165-260 °C
Dry / wet (%)	100%	100%	100%	100%	100%
Used Rope elongation (%)	1%	4,5%	4,5%	8%	9%
UV resistance	excellent	excellent	very good	good	good
TCLL value (%)	100%	70%	70,7%	79,6%	75,1%





‘THROUGH LIFE, FOR LIFE’ SERVICE MODEL

The cost and operational demands on 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 cost-effective 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!

STEP 1 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:

- Review of ships 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.

- Review rope route

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
Based on the holistic analyses, Lankhorst will recommend a rope to meet the desired properties for:

- Elongation
- Rope flexibility/stiffness
- Anti-twist
- Break load
- Chafing gear
- Safety risks
- Floatation
- Service life expectations
- Environmental conditions
- International standards.

STEP 2 ROPE INSTALLATION 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
- Installation via tensioner and spooler (see page 23).

STEP 3 INSPECTION / MAINTENANCE ADVICE / 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:

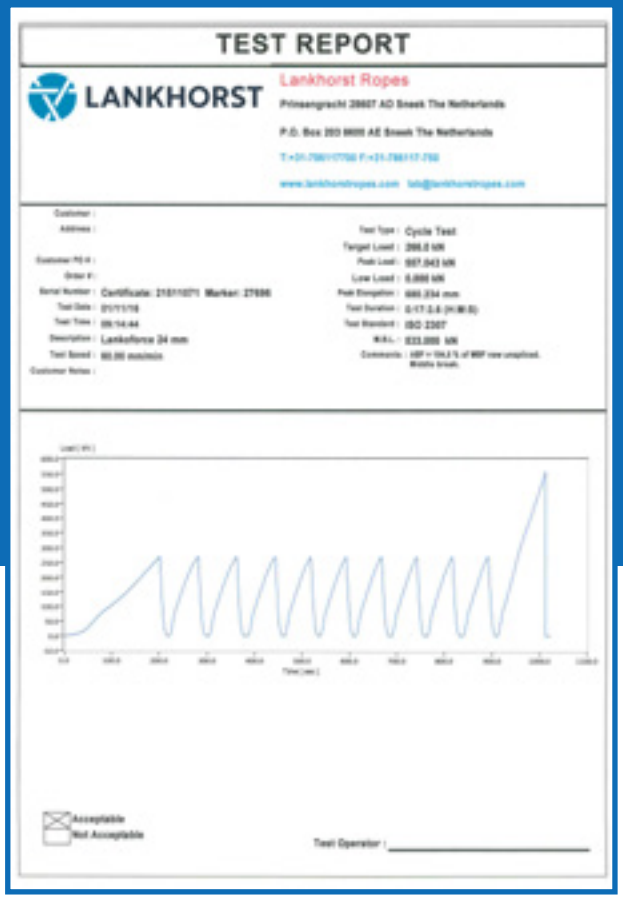
- Hardware condition inspection
- Rope inspection
- Update crew training
- Provide inspection reports.

STEP 4 RESIDUAL STRENGTH TESTING

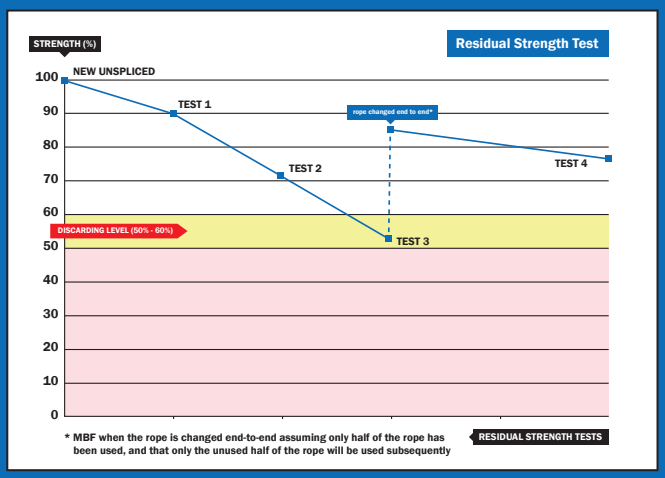
Lankhorst Ropes will provide a continuous residual strength testing program in order to assist in determining the best moment to change the rope end-to-end in order to ensure the most economical life time and to optimise safety on board. We believe this should be based on mooring hours, i.e. the number 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 should be taken into consideration during the review are the environmental conditions at the ports and terminals during the review where the vessel will be moored.

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.


TEST REPORT
LANKHORST
Lankhorst Ropes

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

Minimalising risk and increasing safety for people and environment.

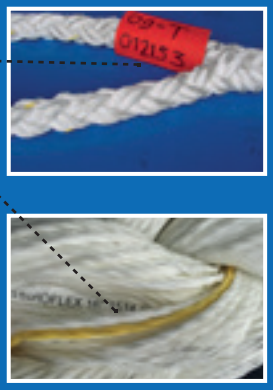
STEP 5 RECYCLING OF ROPES

The rope 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. In the image below 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 synthetic 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 ONLINE ACCESS TO ROPE CERTIFICATES

Lankhorst Ropes offer 24/7 online access to fibre rope and steel wire rope certificates, regardless of the time zone. It provides as standard a manufacturer's certificate for each individual mooring line, connecting shackle and tail. Furthermore, Lankhorst Ropes has a DNV GL type approval for the manufacture of synthetic ropes used for mooring and towing. Check the synthetic rope selection pages to find out for which product a DNV GL L497 'Certificate of Test and Examination of Fibre Ropes' is issued.

Certificates may be mislaid during filing or transportation but can be required immediately to trace and identify ropes. By having direct access to rope certificates, Lankhorst customers are able to instantaneously check all of their ropes' details including construction, diameter, length, minimum breaking load and end termination. Please contact your accountmanager at Lankhorst Ropes for activation.

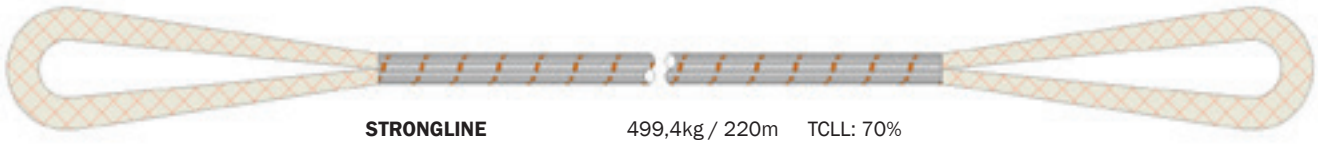
ROPE SOLUTION OVERVIEW

Mooring lines

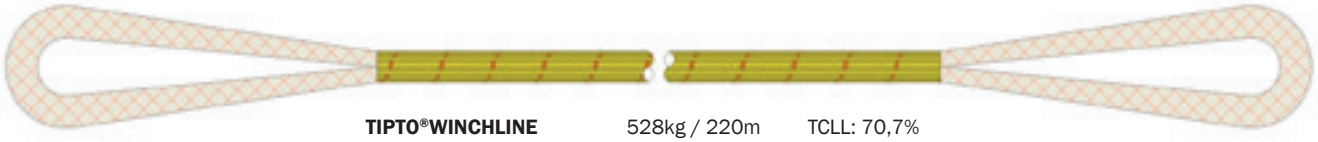
single

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

EWL tails of EUROFLEX® 56,4 kg / 11m TCLL: 79,6%
ø 72mm MBF: 1.334 kN



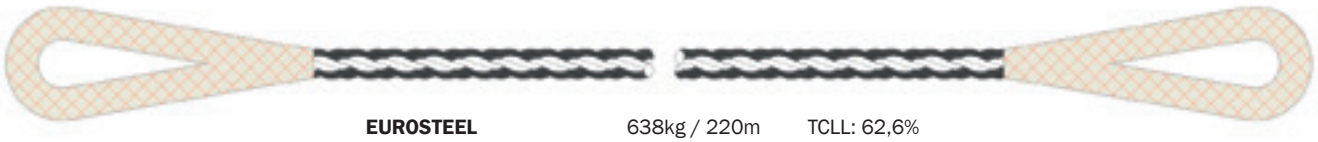
STRONGLINE 499,4kg / 220m TCLL: 70%
ø 56mm MBF: 995 kN



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

EUROFLEX® 578,6kg / 220m TCLL: 79,6%
ø 64mm MBF: 1.061 kN

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



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

Total weight	Elongation of used rope at break	Features
196kg	LANKO®FORCE: 1% EUROFLEX®: 8%	• 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
499,4kg	4,5%	• Good form stability on split drum winch • Excellent abrasion resistance due to polyester jacket • A3 splice with 100% efficiency • Excellent tension – tension fatigue resistance
528kg	4,5%	• 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
578,6kg	8%	• Rope built for extremely long service life • Good heat resistance • Extremely high TCLL value and energy absorption • Excellent tension – tension fatigue resistance
605kg	9%	• Floating rope, reduced risk of entangling in propeller • High TCLL value • Good tension – tension fatigue resistance • Good heat resistance
638kg	5%	• Economical floating solution • 25% stronger than conventional 100% PP ropes

LANKHORST

ROPE SELECTION

SYNTHETIC ROPES

HIGH MODULUS ROPES

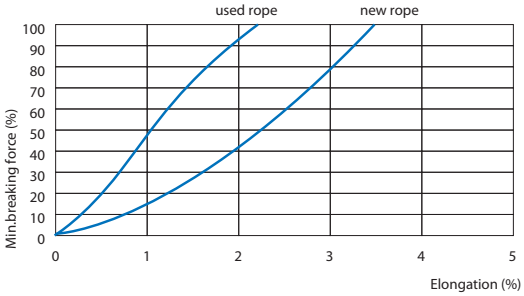
LANKO®FORCE

12 strand braided rope, made of Dyneema® yarns.

12 strand braided rope, made of Dyneema® yarns. LANKO®FORCE is an excellent alternative for heavy and lumbersome 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. Please contact us for synthetic lifting slings for heavy lift applications. Available in 12 x 1 construction (up to 86mm) and 12 x 3 construction (from 88mm). In a 12 x 3 construction each strand is a 3 strand rope.

SPECIFIC GRAVITY	0,98 (floating)
UV-RESISTANCE	excellent
ABRASION RESISTANCE	excellent
CHEMICAL RESISTANCE	good
MELTING POINT	approx. 147 °C
CONSTRUCTION	12 x 1 strand plaited up to 86mm 12 x 3 strand plaited from 88mm
TCLL VALUE	100%
COLOUR	yellow
WATER ABSORPTION	0%
ELONGATION USED ROPE	1%
QUICK BURY SPLICE	

ELONGATION:



article number	nominal diameter mm	inch	weight kg/100m	lb/100ft	minimum breaking force kN	t (metric)	lbs
construction 12x1							
092.006	6	1/4	2,3	1,5	35	3,5	7.870
092.008	8	5/16	3,9	3	62	6,3	13.942
092.0010	10	3/8	5,9	4	98	9,9	22.037
092.0012	12	1/2	9,3	6	137	13,9	30.807
092.0014	14	9/16	10,7	7,2	184	18,7	41.376
092.0016	16	5/8	14	9	244	24,8	54.869
092.0018	18	11/16	18	12	303	30,9	68.136
092.0020	20	13/16	21,5	14	374	38,1	84.102
092.0022	22	7/8	28	19	450	45,8	101.192
092.0024	24	1	33,5	23	533	54,3	119.856
092.0026	26	1 1/16	38,5	26	612	62,4	137.621
092.0028	28	1 1/8	43,5	29	701	71,4	157.635
092.0030	30	1 1/4	51,5	35	789	80,4	177.423
092.0032	32	1 5/16	59	40	887	90,4	199.461
092.0034	34	1 3/8	64	43	991	101,0	222.847
092.0036	36	1 1/2	72	48	1.076	109,7	241.961
092.0038	38	1 9/16	80	54	1.191	121,4	267.822
092.0040	40	1 5/8	89	60	1.314	133,9	295.481
092.0044	44	1 3/4	107	72	1.559	158,9	350.574
092.0048	48	1 7/8	128	86	1.853	189,0	416.686
092.0052	52	2 1/16	149	101	2.160	220,3	492.468
092.0056	56	2 1/4	174	117	2.490	254,0	559.929
092.0060	60	2 3/8	200	134	2.820	287,6	634.137
092.0064	64	2 5/8	227	153	3.210	297,8	721.837
092.0068	68	2 11/16	258	173	3.610	327,4	811.785
092.0072	72	2 13/16	288	194	4.010	368,2	901.734
092.0080	80	3 3/16	355	239	4.510	459,9	1.014.169
construction 12x3							
092.088	88	3 7/16	430	289	5.320	542,4	1.196.006
092.096	96	3 3/4	510	343	6.478	660,5	1.456.372
092.0104	104	4 1/8	600	403	7.677	782,8	1.725.777
092.0112	112	4 7/16	695	467	8.875	905,0	1.995.181
092.0120	120	4 3/4	798	536	10.289	1.049,1	2.313.087
092.0128	128	5 1/16	910	611	11.486	1.169,2	2.577.642
092.0136	136	5 3/8	1.030	692	12.766	1.301,7	2.869.754
092.0144	144	5 2/3	1.150	773	14.260	1.454,1	3.205.738

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:

with polyester jacket

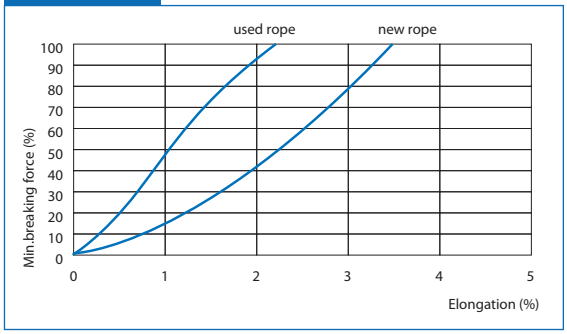
with DYNEEMA® jacket

with DEFENDER® jacket

LANKO®BASIC

This 12 strand braided LANKO®BASIC HMPE rope is combining the long term experiences of two major global leading companies in yarn manufacturing and rope making. The HMPE yarns are manufactured by DSM and the rope is made by Lankhorst Ropes. The LANKO®BASIC is designed to cater non-critical applications. Often for these kind of applications the total cost of ownership is less important than the initial costs. The LANKO®BASIC can fulfill that requirement and does ease the mind because DSM and Lankhorst Ropes are controlling the different manufacturing processes. LANKO®BASIC is floating, has a bright orange coating and a good UV, abrasion and chemical resistance. Please contact our sales team to ensure what the best high performance rope is for your particular application.

ELONGATION:



article number	nominal diameter mm	nominal diameter inch	weight kg/100m	weight lb/100ft	minimum breaking force kN	minimum breaking force t (metric)	minimum breaking force lbs
097.220	20	13/16	21,5	14	361	36,8	81.156
097.222	22	7/8	28	19	434	44,3	97.566
097.224	24	1	33,5	23	514	52,4	115.551
097.226	26	1 1/16	37,5	25	590	60,2	132.636
097.228	28	1 1/8	43,5	29	676	68,9	151.970
097.230	30	1 1/4	51,5	35	761	77,6	171.079
097.232	32	1 5/16	59	40	856	87,3	192.435
097.234	34	1 3/8	65	44	956	97,5	214.916
097.236	36	1 1/2	71	48	1.040	106,0	233.800
097.238	38	1 9/16	80	54	1.150	117,3	258.529
097.240	40	1 5/8	88,5	59	1.260	128,5	283.257
097.242	42	1 11/16	98,5	66	1.370	139,7	307.986
097.244	44	1 3/4	109	73	1.500	153,0	337.211
097.248	48	1 7/8	126	85	1.790	182,5	402.405
097.252	52	2 1/16	149	100	2.080	212,1	467.600
097.256	56	2 1/4	176	118	2.400	244,7	539.538
097.260	60	2 1/2	202	136	2.720	277,4	611.476
097.264	64	2 5/8	230	155	3.100	316,1	696.903
097.268	68	2 11/16	259	174	3.480	354,9	782.330
097.272	72	2 13/16	290	195	3.870	394,6	870.005

Other diameters on request

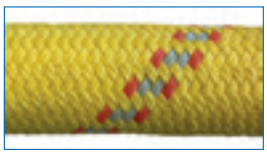
Diameter, weight and MBF (as well as other mechanical and physical properties) are determined according ISO 2307:2010. The MBF refers to the breaking strength in the rope / wire itself, without splices or any other form of termination that can be formed with or without the use of accessories / fittings.

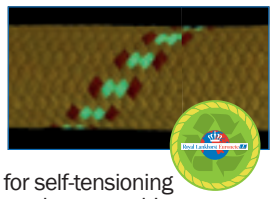
SPECIFIC GRAVITY	0,98 (floating)
UV-RESISTANCE	good
ABRASION RESISTANCE	good
CHEMICAL RESISTANCE	good
MELTING POINT	approx. 147 °C
CONSTRUCTION	12 strand braided
TCLL VALUE	100%
COLOUR	orange
WATER ABSORPTION	0%
ELONGATION USED ROPE	1%

LANKHORST

WINCHLINES

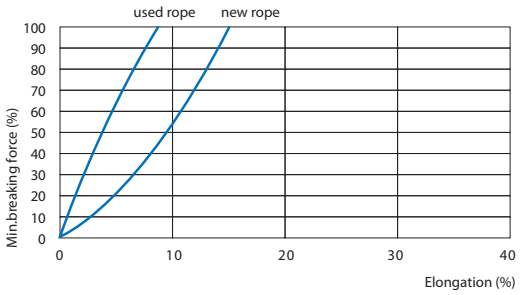
TIPTO®WINCHLINE





A dedicated floating winch line for self-tensioning winches. This load-bearing 7 strand core combines high strength and relatively low elongation. The non-load-bearing braided jacket includes phosphorescent tracer yarn allowing the rope to glow during the hours of darkness, increasing dockside visibility and creating a pleasing visual effect of the moored vessel for your passengers. The jacket also 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.

ELONGATION:



article number	nominal diameter mm	inch	weight kg/100m	lb/100ft	minimum breaking force kN	t (metric)	lbs
111.952	36	1 1/2	74	50	248	25,2	55.753
111.342	42	1 11/16	98	66	340	34,6	76.435
111.346	46	1 13/16	115	77	425	43,3	95.544
111.348	48	1 7/8	125	84	472	48,1	106.110
111.350	50	2	133	89	512	52,2	115.102
111.354	54	2 1/8	150	101	598	60,9	134.436
111.896	56	2 1/4	160	108	640	65,2	143.878
111.358	58	2 5/16	167	112	682	69,5	153.320
111.967	60	2 3/8	184	124	730	74,4	164.111
111.966	62	2 7/16	190	128	780	79,5	175.351
111.364	64	2 5/8	203	136	850	86,6	191.088
111.368	68	2 11/16	221	149	934	95,2	209.972
111.370	70	2 3/4	240	161	990	100,9	222.561
111.374	74	2 15/16	256	172	1.100	112,1	247.290
111.380	80	3 3/16	355	239	1.270	129,5	285.507
111.942	82	3 1/4	380	255	1.350	137,6	303.492
111.384	84	3 5/16	395	265	1.420	144,8	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.

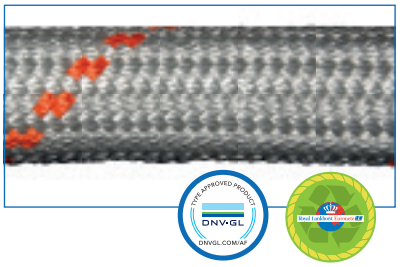
SPECIFIC GRAVITY	0,93 (floating)
UV-RESISTANCE	very good
ABRASION RESISTANCE	very good
CHEMICAL RESISTANCE	good
MELTING POINT	approx. 140 °C
CONSTRUCTION	7 strand + jacket
TCLL VALUE	70,7%
COLOUR	yellow
MARKER YARN	orange
WATER ABSORPTION	0%
ELONGATION USED ROPE	4,5%
A3 SPLICE	
ENHANCED EYE PROTECTION	

A3 splice

In case of the unique A3 splice, the splice and the eye have been fully integrated. The A3 splice handling advantages include:

- No doubling of the rope in the splice area, therefore no doubling of the splice weight
- No stiffness due to the splicing, the rope maintains its natural flexibility
- Neater spooling on the storage drum of the winch if the line has an eye at both ends
- It yields 100% splice efficiency

STRONGLINE™



STRONGLINE™ has a rope construction comprising a parallel core with a braided protective cover. The parallel core produces a far higher strength rope than might be expected for a rope of this diameter and material. The protective cover ensures a long service life due to its excellent resistance against abrasion. Regular maintenance can significantly lengthen the rope service life. The main applications of STRONGLINE™ are towing and mooring.

When STRONGLINE™ is installed on a towing winch, twists in the rope during installation can reduce the service life of the rope once put to work. To prevent twisting, it is crucial to use a turning table for unwinding from a coil. To facilitate the installation and avoiding induced twisting, a longitudinal marking has been added to the STRONGLINE™ during manufacture. Please make sure the longitudinal marking line is always on the same position while winding up the STRONGLINE™ on your towing winch.

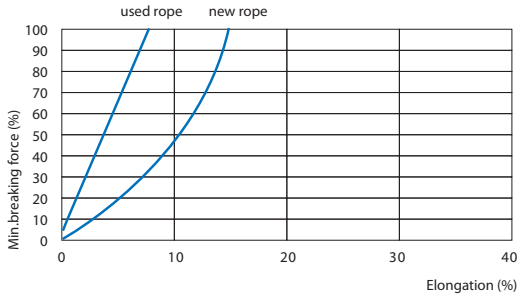
MADE OF 100% POLYESTER

article number	nominal diameter mm	inch	weight kg/100m	lb/100ft	minimum breaking force kN	t (metric)	lbs
081.056	56	2 1/4	227	152	995	101,4	223.685
081.060	60	2 3/8	256	172	1.130	115,2	254.034
081.064	64	2 5/8	284	190	1.270	129,5	285.507
081.068	68	2 11/16	307	206	1.420	144,8	319.229
081.072	72	2 13/16	367	246	1.570	160,0	352.950
081.076	76	3	390	261	1.730	176,4	388.920
081.080	80	3 3/16	417	280	1.890	192,7	424.889
081.088	88	3 7/16	493	330	2.250	229,4	505.820
081.092	92	3 5/8	528	354	2.450	249,8	550.782
081.096	96	3 3/4	560	375	2.630	268,1	591.248

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.

ELONGATION:



SPECIFIC GRAVITY	1,38
UV-RESISTANCE	excellent
ABRASION RESISTANCE	excellent
CHEMICAL RESISTANCE	good
MELTING POINT	approx. 265 °C
CONSTRUCTION	parallel cores with jacket
TCLL VALUE	70%
COLOUR	white
MARKER YARN	orange
WATER ABSORPTION	< 1%
ELONGATION USED ROPE	4,5%
A3 SPLICE	
ENHANCED EYE PROTECTION	

SOFT ROPES

EUROFLEX®

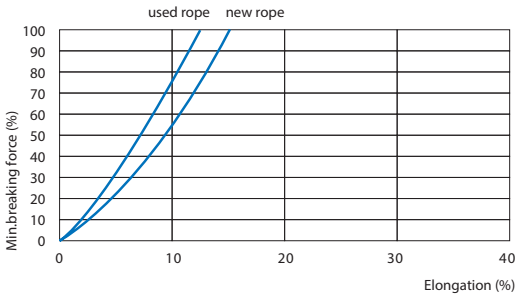
Continuing industry demand for mooring and towing ropes with higher strength and smaller diameters has led to the development of EUROFLEX®. Its excellent handling properties, softness and flexibility, combined with high energy absorption capability and abrasion resistance, make the EUROFLEX® one of the best ropes available today for mooring and towing for both shipping and offshore operations.

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

article number	nominal diameter mm	inch	weight kg/100m	lb/100ft	minimum breaking force kN	t (metric)	lbs
152.418	40	1 5/8	102	69	432	44,0	97.118
152.419	44	1 3/4	124	83	518	52,8	116.452
152.420	48	1 7/8	148	99	612	62,4	137.584
152.429	52	2 1/16	173	116	714	72,8	160.514
152.430	56	2 1/4	201	135	823	83,9	185.019
152.427	60	2 3/8	231	155	941	95,9	211.546
152.428	64	2 5/8	263	177	1.061	108,2	238.523
152.426	68	2 11/16	296	199	1.197	122,0	269.098
152.424	72	2 13/16	332	223	1.334	136,0	299.897
152.425	76	3	370	249	1.481	151,0	332.944
152.431	80	3 3/16	411	276	1.628	166,0	365.991
152.432	88	3 7/16	497	334	1.964	200,2	441.527
152.422	96	3 3/4	590	396	2.321	236,6	521.784
152.434	104	4 1/8	689	463	2.699	275,1	606.762
152.435	112	4 7/16	803	540	3.119	317,9	701.182
152.436	120	4 3/4	923	620	3.549	361,8	797.851
152.437	128	5 1/16	1.050	706	4.022	410,0	904.186
152.438	136	5 3/8	1.187	798	4.515	460,2	1.015.017
152.439	144	5 2/3	1.334	896	5.040	513,8	1.133.042

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:
47% polyolefin
53% 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 mooring line. Both versions are fitted with two protected and spliced eyes of 2 m and 1m respectively.

EUROFLEX®MOORING TAIL

article number	nominal diameter mm	inch	weight kg/tail	lb/tail	minimum breaking force kN	t (metric)	lbs
EWL: 11m							
152.448	48	1 7/8	23,7	52	612	62,4	137.584
152.450	56	2 1/4	34,2	75	823	83,9	185.019
152.447	60	2 3/8	39,3	86	941	95,9	211.546
152.449	62	2 7/16	42,0	92	1.000	101,9	224.810
152.451	64	2 5/8	44,7	98	1.061	108,2	238.523
152.454	68	2 11/16	50,3	110	1.197	122,0	269.098
152.452	72	2 13/16	56,4	124	1.334	136,0	299.897
152.455	76	3	66,6	146	1.481	151,0	332.944
152.453	80	3 3/16	70,4	163	1.628	166,0	365.991
152.446	84	3 5/16	81,4	179	1.785	182,0	401.286
152.456	88	3 7/16	89,5	197	1.964	200,2	441.527
152.444	96	3 3/4	106,2	234	2.321	236,6	521.784
EWL: 22m							
152.462	60	2 3/8	64,7	142	941	95,9	211.546
152.460	72	2 13/16	93,0	205	1.334	136,0	299.897
152.461	80	3 3/16	119,2	262	1.628	166,0	365.991
152.463	88	3 7/16	144,1	317	1.964	200,2	441.527
152.465	96	3 3/4	171,1	376	2.321	236,6	521.784

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.

EUROFLOAT®PREMIUM

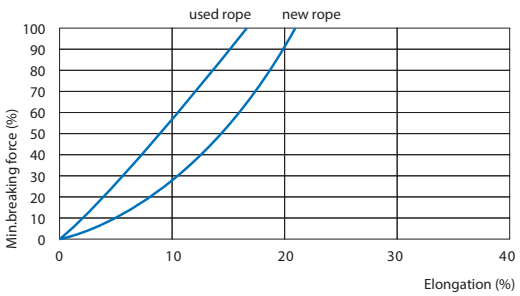
SPECIFIC GRAVITY	0,98 (floating)
UV-RESISTANCE	good
ABRASION RESISTANCE	very good
CHEMICAL RESISTANCE	good
MELTING POINT	approx. 165°C/ 260°C
CONSTRUCTION	8 strand plaited
TCLL VALUE	75,1%
COLOUR	off white
MARKER YARN	double green markers
WATER ABSORPTION	0,1%
ELONGATION USED ROPE	9%

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.

article number	nominal diameter mm	inch	weight kg/100m	lb/100ft	minimum breaking force kN	t (metric)	lbs
152.632	32	1 5/16	53	36	207	21,1	46.535
152.636	36	1 1/2	67	45	259	26,4	58.226
152.640	40	1 5/8	85	57	324	33,0	72.838
152.644	44	1 3/4	99	67	377	38,4	84.753
152.648	48	1 7/8	120	80	456	46,5	102.513
152.652	52	2 1/16	141	95	534	54,4	120.048
152.656	56	2 1/4	162	109	613	62,5	137.808
152.660	60	2 3/8	188	126	701	71,4	157.591
152.664	64	2 5/8	216	145	799	81,4	179.622
152.669	68	2 11/16	245	165	900	91,7	202.328
152.672	72	2 13/16	275	185	1.000	101,9	224.809
152.676	76	3	305	205	1.098	111,9	246.840
152.680	80	3 3/16	339	218	1.205	122,8	270.895
152.688	88	3 7/16	411	276	1.470	149,9	330.469
152.696	96	3 3/4	490	319	1.735	176,9	390.044
152.697	104	4 1/8	573	385	2.019	205,8	453.881
152.698	112	4 7/16	669	450	2.323	236,8	522.222
	120	4 1/2	764	513	2.650	270,2	595.734
	128	5 1/16	870	585	3.030	308,9	681.159
	136	5 3/8	982	660	3.380	344,6	759.841
	144	5 2/3	1.100	739	3.770	384,4	847.515

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

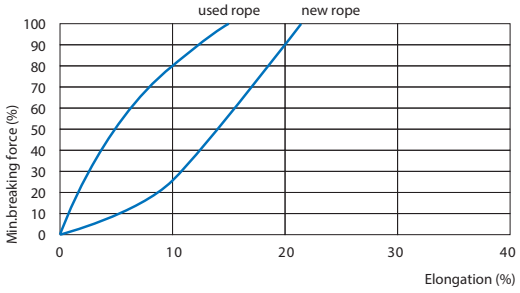
TIPTO®EIGHT

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.

article number	nominal diameter mm	inch	weight kg/100m	lb/100ft	minimum breaking force kN	t (metric)	lbs
111.693	40	1 5/8	75,6	51	269	27,4	60.474
111.721	44	1 3/4	92,4	62	321	32,7	72.164
111.695	48	1 7/8	109	73	378	38,5	84.978
111.737	52	2 1/16	128	86	441	44,9	99.141
111.697	56	2 1/4	149	100	508	51,8	114.203
111.698	60	2 3/8	171	115	578	58,9	129.940
111.699	64	2 5/8	194	130	651	66,3	146.351
111.700	68	2 11/16	220	148	731	74,5	164.335
111.701	72	2 13/16	246	165	814	83,0	182.994
111.703	80	3 3/16	305	205	992	101,1	223.010
111.735	88	3 7/16	369	248	1.180	120,3	265.275
111.705	96	3 3/4	438	294	1.400	142,7	314.733
111.741	104	4 1/8	515	346	1.620	165,1	364.190
111.743	112	4 7/16	596	400	1.870	190,6	420.393
111.691	120	4 3/4	686	461	2.130	217,2	478.843
111.744	128	5 1/16	779	523	2.410	245,7	541.790
111.746	136	5 3/8	880	591	2.710	276,3	609.232
111.739	144	5 2/3	987	663	3.030	308,9	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)
UV-RESISTANCE	very good
ABRASION RESISTANCE	very good
CHEMICAL RESISTANCE	good
MELTING POINT	approx. 140 °C
CONSTRUCTION	8 strand plaited
TCLL VALUE	70,7%
COLOUR	yellow
MARKER YARN	orange
WATER ABSORPTION	0%
ELONGATION USED ROPE	5%

EUROSTEEL

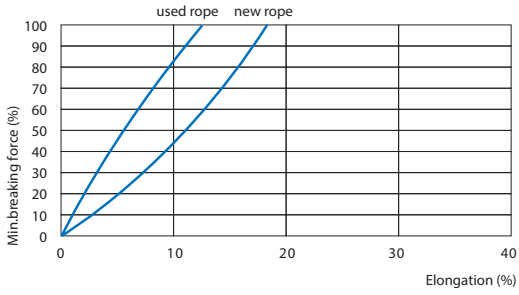
article number	nominal diameter mm	inch	weight kg/100m	lb/100ft	minimum breaking force kN	t (metric)	lbs
122.532	32	1 5/16	46	31	180	18,3	40.538
122.536	36	1 1/2	58,5	39	227	23,1	51.113
122.540	40	1 5/8	72	48	276	28,1	62.128
122.544	44	1 3/4	88	59	327	33,3	73.584
122.548	48	1 7/8	104	70	383	39,0	86.142
122.552	52	2 1/16	122	82	445	45,3	100.022
122.556	56	2 1/4	142	95	509	51,9	114.342
122.560	60	2 3/8	163	110	583	59,4	131.086
122.564	64	2 5/8	185	124	660	67,3	148.270
122.572	72	2 13/16	234	157	825	84,1	185.503
122.580	80	3 3/16	290	195	1.009	102,8	226.922
122.588	88	3 7/16	351	236	1.215	123,9	273.188
122.596	96	3 3/4	417	280	1.431	145,9	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.

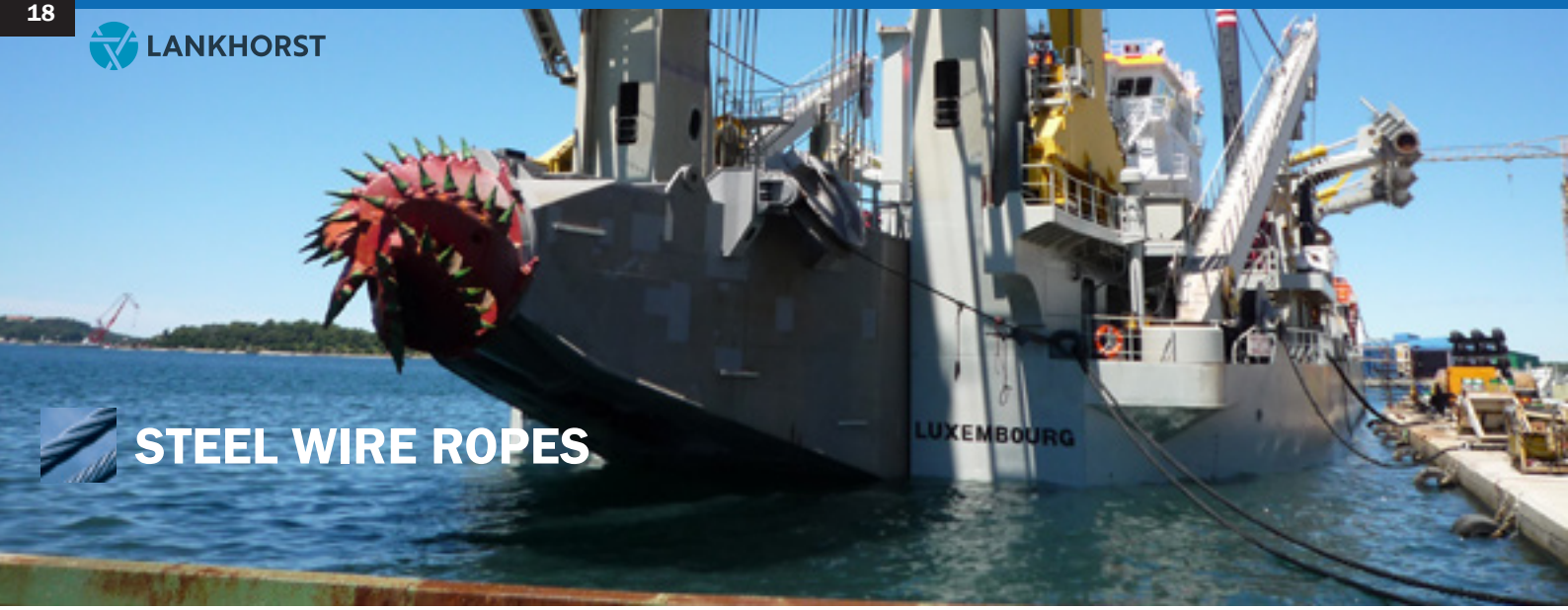
An all purpose 8 strand plaited mooring rope made from high strength monofilament fiber. The EUROSTEEL rope does not absorb water, has a high breaking load in relation to the diameter of the rope, whilst still floating. The EUROSTEEL rope is designed as general purpose rope and can be used for various 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
TCLL VALUE	62,6%
COLOUR	black & white
WATER ABSORPTION	0,1%
ELONGATION USED ROPES	5%

ELONGATION:



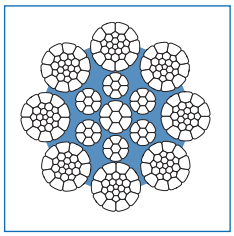
LANKHORST



STEEL WIRE ROPES

LUFFING WIRE

LANKO®TOP COMPACTED



An 8 strand compacted luffing wire rope. During the LANKO®TOP COMPACTED production process, the core is covered by an especially designed HDPE extruded cover. This special feature gives the wire rope stability, and avoids point-to-point contact between wires of the outer and inner strands, as well as preventing corrosion and wear of the core. Compacting the wire rope provides greater strength, due to higher steel content, and better abrasion resistance, thanks to the larger contact area between wire rope and sheave.

Construction:

12 - 15 mm	8xK17
16 - 28 mm	8xK26
30 - 42 mm	8xK31
44 - 46 mm	8xK36

Galva-nized | Greased | 2160 | RHRL

Compact | Plastic Coated Core | No Swivel

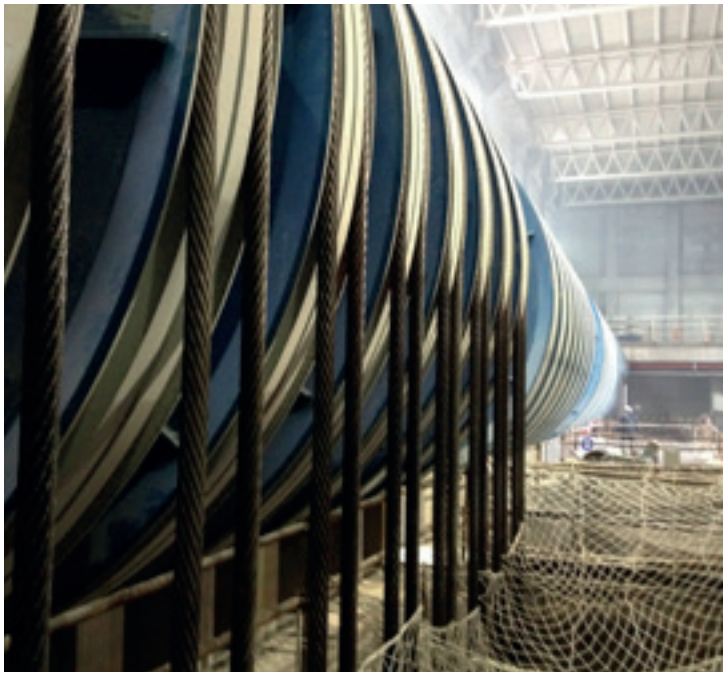
Optional

RHLL | LHRL | LHLL

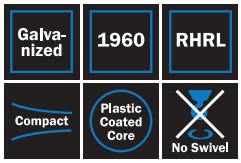
article number	nominal diameter mm	weight kg/100m	weight lb/100ft	minimum breaking force kN	minimum breaking force t (metric)	minimum breaking force lbs
291.533	12	64,9	44	133	13,5	29.900
291.611	13	76,9	52	156	15,9	35.071
271.014	14	90,3	60	187	19,1	42.040
291.535	15	102,6	69	214	21,8	48.110
271.016	16	116	78	242	24,6	54.404
271.018	18	149,4	100	307	31,3	69.017
291.582	19	164,1	110	342	34,8	76.886
271.020	20	183,6	123	379	38,6	85.204
271.022	22	221,5	148	459	46,8	103.189
291.596	24	263,5	176	556	56,7	124.996
271.026	26	310,6	208	655	66,7	147.252
271.028	28	357,1	239	748	76,2	168.160
271.030	30	411,6	276	864	88,1	194.288
271.032	32	467,2	313	968	98,7	217.619
291.608	34	529,4	355	1.091	111,2	245.271
271.036	36	584,2	391	1.217	124,1	273.597
291.627	38	657,9	441	1.332	135,8	299.452
291.631	40	729,8	490	1.479	150,8	321.371
291.634	42	797,8	536	1.613	164,4	362.624
291.636	44	900,1	604	1.820	185,5	431.642
291.638	46	978	656	1.975	201,3	444.007
291.640	48	1.061	710	2.155	219,7	484.473
	50	1.162	781	2.363	240,9	531.150
	52	1.251	841	2.545	259,5	572.182
	54	1.349	907	2.734	278,7	614.633
	56	1.459	980	2.942	299,9	661.318
	58	1.569	1.055	3.168	323,0	712.215
	60	1.671	1.123	3.381	344,7	760.096
	62	1.745	1.173	3.528	359,7	793.126
	64	1.866	1.254	3.764	383,8	846.181
	66	1.967	1.322	3.988	406,6	896.538
	68	2.081	1.398	4.220	430,3	948.694
	70	2.169	1.457	4.446	453,3	999.440
	72	2.326	1.563	4.722	481,5	1.061.547

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.

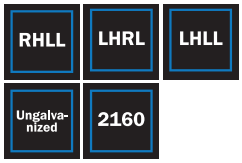
CASAR SUPERPLAST8



Very high breaking load and good resistance against drum crushing. Hoisting rope in multiple part reeving for smaller lifting heights as well as for twin hoist systems with left and right hand lay ropes for greater lifting heights. Suitable for multi-layer spooling.



Optional



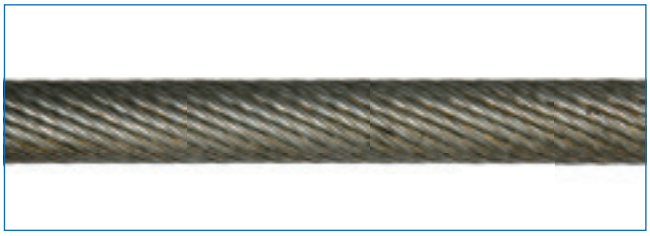
nominal diameter	weight		minimum breaking force 1960 N/mm²			minimum breaking force 2160 N/mm²		
mm	kg/100m	lb/100ft	kN	t (metric)	lbs	kN	t (metric)	lbs
10	47	32	91	9,27	20.435	100	10,1	22.391
11	57	38	109	11,10	24.482	119	12,1	26.820
12	66	44	127	12,97	28.596	139	14,2	31.338
13	78	53	152	15,48	34.126	166	16,9	37.363
14	89	60	174	17,72	39.072	190	19,4	42.804
15	103	69	200	20,37	44.917	219	22,3	49.211
16	118	79	227	23,10	50.919	248	25,3	55.775
17	135	91	260	26,51	58.450	285	29,0	64.026
18	151	102	293	29,86	65.824	321	32,7	72.119
19	167	112	320	32,67	72.029	351	35,7	78.908
20	185	125	358	36,53	80.535	395	40,2	88.756
21	204	137	395	40,30	88.852	436	44,4	97.931
22	224	150	432	44,07	97.162	474	48,2	106.447
23	246	165	473	48,23	106.335	518	52,8	116.496
24	269	181	517	52,76	116.316	567	57,8	127.444
25	289	194	560	57,06	125.803	613	62,5	137.898
26	313	210	605	61,68	135.987	663	67,5	148.981
27	336	226	647	65,96	145.406	709	72,2	159.300
28	361	243	699	71,27	157.119	762	77,7	171.304
29	383	257	738	75,24	165.864	808	82,4	181.713
30	413	278	797	81,25	179.128	873	89,0	196.236
31	438	294	847	86,34	190.346	928	94,5	208.510
32	482	324	926	94,42	208.151	1.014	103,4	228.024
33	503	338	968	98,75	217.705	1.061	108,1	238.500
34	542	364	1.046	106,66	235.150	1.146	116,8	257.609
36	606	407	1.173	119,56	263.588	1.285	130,9	288.767
38	666	448	1.283	130,78	288.317	1.405	143,2	315.857
40	741	498	1.429	145,75	321.319	1.566	159,6	352.006
42	817	549	1.582	161,27	355.535	1.733	176,6	389.504
44	893	600	1.726	175,98	387.975	1.891	192,8	425.046
46	990	665	1.899	193,68	426.980	2.081	212,1	467.760
48	1.075	722	2.069	210,97	465.107	2.267	231,1	509.552
50	1.155	776	2.232	227,63	501.841	2.446	249,3	549.770
52	1.251	841	2.421	246,91	544.330	2.653	270,4	596.328
54	1.361	915	2.627	267,83	590.461	2.877	293,4	646.865
56	1.473	990	2.853	290,97	641.470	3.126	318,7	702.753
58	1.559	1.048	3.004	306,36	675.393	3.291	335,6	739.914
60	1.679	1.128	3.245	330,90	729.505	3.555	362,5	799.196
62	1.781	1.197	3.432	349,98	771.567	3.760	383,4	845.259
64	1.883	1.265	3.647	371,87	819.833	3.995	407,3	898.134
66	2.018	1.356	3.877	395,33	871.539	4.247	433,0	954.786
68	2.153	1.447	4.147	422,91	932.350	4.600	469,1	1.034.188
70	2.302	1.547	4.462	455,04	1.003.187	4.918	501,4	1.105.543
72	2.431	1.634	4.713	480,60	1.059.524	5.194	529,6	1.167.635
74	2.569	1.726	4.981	507,89	1.119.683	5.489	559,7	1.233.954
76	2.695	1.811	5.226	532,94	1.174.919	5.760	587,3	1.294.809

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.

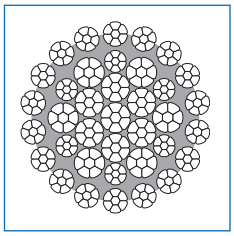
LANKHORST

HOISTING WIRE

LANKO®PACK



Compacted multi strand, non-rotating, hoisting wire rope. The construction ensures great flexibility, making this wire rope suitable for use on “European” types of cranes. The galvanization and internal/external lubrication provide protection against the environment. Our controlled production process and material selection, ensure the LANKO®PACK wire rope the highest quality level available today. The compacting gives this wire rope added breaking strength for those circumstances where it is needed.



Galva-nized | Greased | RHLL | 2160

Compact | Swivel

Optional

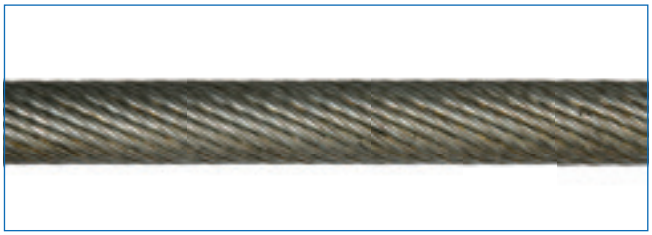
RHRL | LHRL | LHLL | Plastic Coated Core

article number	nominal diameter mm	weight kg/100m	weight lb/100ft	minimum breaking force kN	minimum breaking force t (metric)	minimum breaking force lbs
291.020	10	48	32	96,9	9,8	21.783
291.023	12	68	46	137,3	14,0	30.865
291.026	13	82	55	165,7	16,9	37.248
291.034	14	95	64	192,5	19,6	43.266
291.101	15	109	73	220,6	22,4	49.603
291.239	16	125	84	251,4	25,6	56.521
291.249	18	157	106	317,7	32,4	71.428
291.241	19	176	118	355,9	36,2	80.002
291.242	20	194	130	393,0	40,1	88.341
291.243	22	234	157	474,7	48,4	106.709
291.244	24	279	187	567,4	57,8	127.556
291.246	25	304	204	616,6	62,8	138.608
291.238	26	327	220	661,1	67,9	149.739
291.240	28	380	255	770,9	78,6	173.299
291.245	30	439	295	888,8	90,6	199.809
291.248	32	498	335	1.007,8	102,7	226.556
291.247	34	559	376	1.133,0	115,5	254.710
291.250	36	631	424	1.282,8	130,8	288.386
291.251	38	701	471	1.418,4	144,6	318.869
291.252	40	774	520	1.569,0	159,9	352.724
	42	852	573	1.730,0	176,5	388.913
	44	937	630	1.909,9	194,8	429.354
	46	1.033	694	2.095,8	213,8	471.165
	48	1.132	761	2.293,9	234,0	515.689
	50	1.203	809	2.451,2	250,0	551.042
	52	1.317	885	2.676,4	273,0	601.670
	54	1.434	963	2.868,3	292,6	644.818
	56	1.533	1.030	3.049,0	311,0	685.442
	58	1.649	1.108	3.261,0	332,6	733.102
	60	1.778	1.195	3.500,0	357,0	786.831
	62	1.874	1.259	3.705,0	377,9	832.917
	64	2.020	1.357	4.018,0	409,8	903.282
	66	2.119	1.424	4.135,0	421,8	929.585
	68	2.226	1.496	4.354,0	444,1	978.818
	70	2.378	1.598	4.646,0	473,9	1.044.462

Larger diameters on request

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.

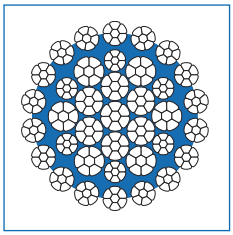
LANKO®LIFT COMPACTED



Multi strand, non-rotating, hoisting wire rope. During the LANKO®LIFT COMPACTED production process, the core is covered by an especially designed HDPE extruded cover. This special feature gives the wire rope stability, and avoids point-to-point contact between wires of the outer and inner strands, as well as preventing corrosion and wear of the core. When the high breaking strength is taken into account, this hoisting wire rope offers exceptional quality.

article number	nominal diameter mm	weight kg/100m	weight lb/100ft	minimum breaking force kN	minimum breaking force t (metric)	minimum breaking force lbs
293.526	26	327	219,1	634,2	64,6	142.695
293.528	28	380,2	254,7	734	74,8	165.150
293.530	30	439,1	294,2	846,3	86,3	190.420
293.532	32	497,7	333,5	959,6	97,8	215.910
293.534	34	558,6	374,3	1.079,3	110,0	242.843
293.536	36	631,4	423	1.221,5	124,5	274.838
293.538	38	701,4	469,9	1.352,4	137,9	304.290
293.540	40	774,4	518,8	1.495	152,4	336.375
293.542	42	851,9	570,8	1.645,2	167,7	370.170
293.544	44	940	629,8	1.818,6	185,4	409.185
293.546	46	1.037,4	695,1	1.995,7	203,5	449.032
293.548	48	1.132	758,4	2.184,3	222,7	491.470

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.



Galva-nized | Greased | 1960 | RHLL

Compact | Plastic Coated Core | Swivel

Optional

RHRL | LHRL | LHLL

8X47WS+IWRC

Single layer 8 stranded construction suitable for certain winch applications which require a flexible construction. Excellent resistance to bending fatigue and good wear characteristics. Less resistant to mechanical damage.

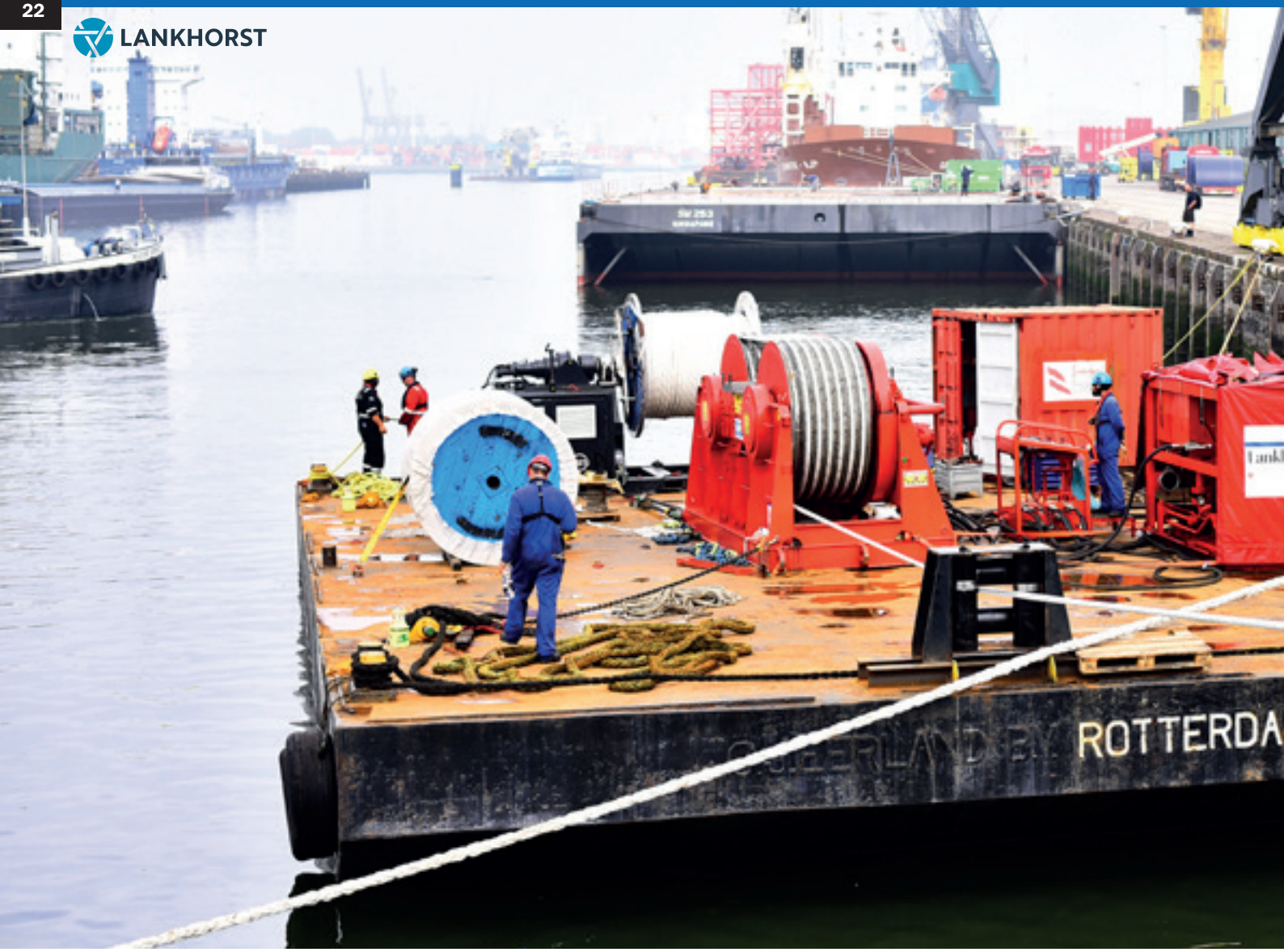
article number	nominal diameter mm	weight kg/100m	weight lb/100ft	minimum breaking force kN	minimum breaking force t (metric)	minimum breaking force lbs
282.109	52	1.106	743	1.890	193	424.891
282.130	56	1.240	833	2.190	223	492.334
282.123	60	1.470	988	2.510	256	564.273
282.135	64	1.620	1.089	2.860	292	642.957
282.107	68	1.829	1.229	3.230	329	726.136
282.118	72	2.126	1.429	3.620	369	813.812
284.183	76	2.410	1.620	4.030	411	905.984
284.210	84	2.940	1.976	4.920	502	1.106.065
284.208	88	3.230	2.171	5.400	551	1.213.974
284.207	92	3.530	2.372	5.910	603	1.328.627
284.798	98	4.080	2.742	7.200	734	1.618.632
284.212	102	4.360	2.930	7.848	800	1.764.309

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.

Galva-nized | Greased | 1960 | RHRL | No Swivel | IWRC Core

Optional

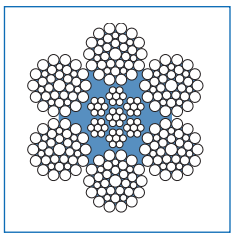
RHLL | LHRL | Compact



GENERAL PURPOSE

6X36WS + IWRC

Standard wire rope with higher breaking strength. Used for all kinds of purposes, i.e. luffing, mooring, towing, anchoring and coupling push barges. The independent wire rope core provides more strength and stability to the wire rope compared to a fibre core. Construction is according to ISO standard.



Galva-nized | Greased | 1960 | RHRL | No Swivel

Optional

RHLL | LHRL | LHLL | Bio degradable lubricant | Compact

article number	nominal diameter mm	weight kg/100m	weight lb/100ft	minimum breaking force kN	minimum breaking force t (metric)	minimum breaking force lbs
292.039	30	368	247	628	64,0	141.000
281.108	32	419	281	715	72,9	161.000
281.893	34	472	316	807	82,2	181.000
281.891	36	530	355	904	92,1	203.000
281.894	38	590	396	1.008	102,7	227.000
281.913	40	654	440	1.120	114,2	252.000
281.914	42	721	485	1.230	125,4	277.000
281.915	44	792	532	1.350	137,6	304.000
281.916	46	866	582	1.480	150,9	332.000
281.918	48	942	633	1.610	164,1	362.000
281.919	50	1.020	687	1.740	177,4	390.000
281.923	51	1.060	715	1.820	185,5	409.000
282.109	52	1.110	743	1.890	192,7	425.000
282.114	54	1.190	801	2.040	208,0	460.000
282.130	56	1.280	862	2.190	223,3	492.000
282.108	58	1.380	925	2.350	239,6	528.000
282.123	60	1.470	989	2.510	255,9	564.000
282.126	62	1.570	1.060	2.680	273,3	603.000
282.135	64	1.680	1.130	2.860	291,6	643.000
282.107	68	1.900	1.276	3.230	329,0	726.136
282.118	72	2.120	1.424	3.617	369,0	813.137

Larger diameters on request

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.

Other steel wire ropes available such as (but not limited to):
Full range of accommodation ladder wires, lifeboat fall wires, rescue boat wires, rescue davit wires, bosun store davit wires, fuel oil hose handling davit wires, engine room crane wires, emergency cargo pump handling davit wires, cargo machinery room crane wires and provision crane wires.

TENSIONER AND SPOOLER

When installing a new rope, it is essential, for multiple layer coiling, to make certain that the layers of rope are spooled with sufficient tension. Our tensioner is a machine which is specially designed for producing a constant back tension whilst spooling a rope onto a drum of a winch.

TENSIONER

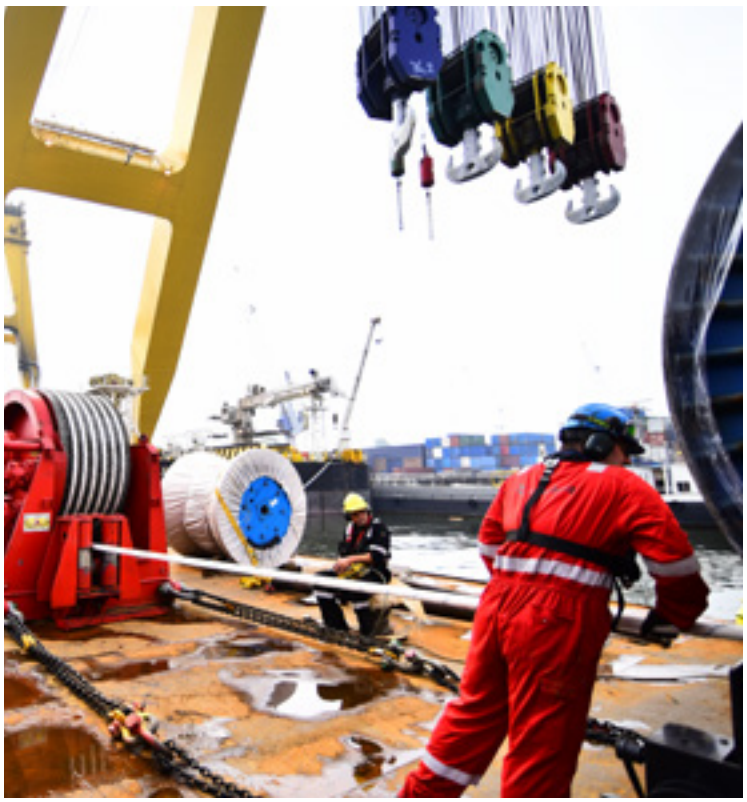
TENSIONER 100T

Machine number	932010-040
Date manufactured	2009
Machine description	tensioner 100T – back tensioning system
Purpose	pre-tensioning of steel wire rope when installing onto winch system
Set-up	total system includes; tensioner, powerpack and control pedestal
Render load	5 tonnes minimum to 100 tonnes maximum – manually adjustable
Maximum pulling capacity	90 tonnes
Wire rope diameter	max. 120 mm
Rendering mode	max. speed of 12 metres per minute
Powering mode	low load (<13 tonnes) – 4,7 m/min medium load (13 to 17 tonnes) – 3,5 m/min high load (17 to 90 tonnes) – 3,5 m/min to 0,68 m/min (horse power controlled)
Drum diameter	1.800 mm
No. grooves	7
Groove radius	63,5 mm
Hydraulic hose lengths	powerpack-tensioner 10m /tensioner-control 5m /powerpack-control 10m
Weight tensioner unit	23,5 Ton
Weight powerpack unit	5 Ton
Weight control pedestal	300 kg
Dimensions tensioner unit	overall length 5.389 mm overall width 2.240 mm overall height 2.599 mm
Dimensions powerpack unit	overall length 3.762 mm overall width 2.000 mm overall height 2.223 mm

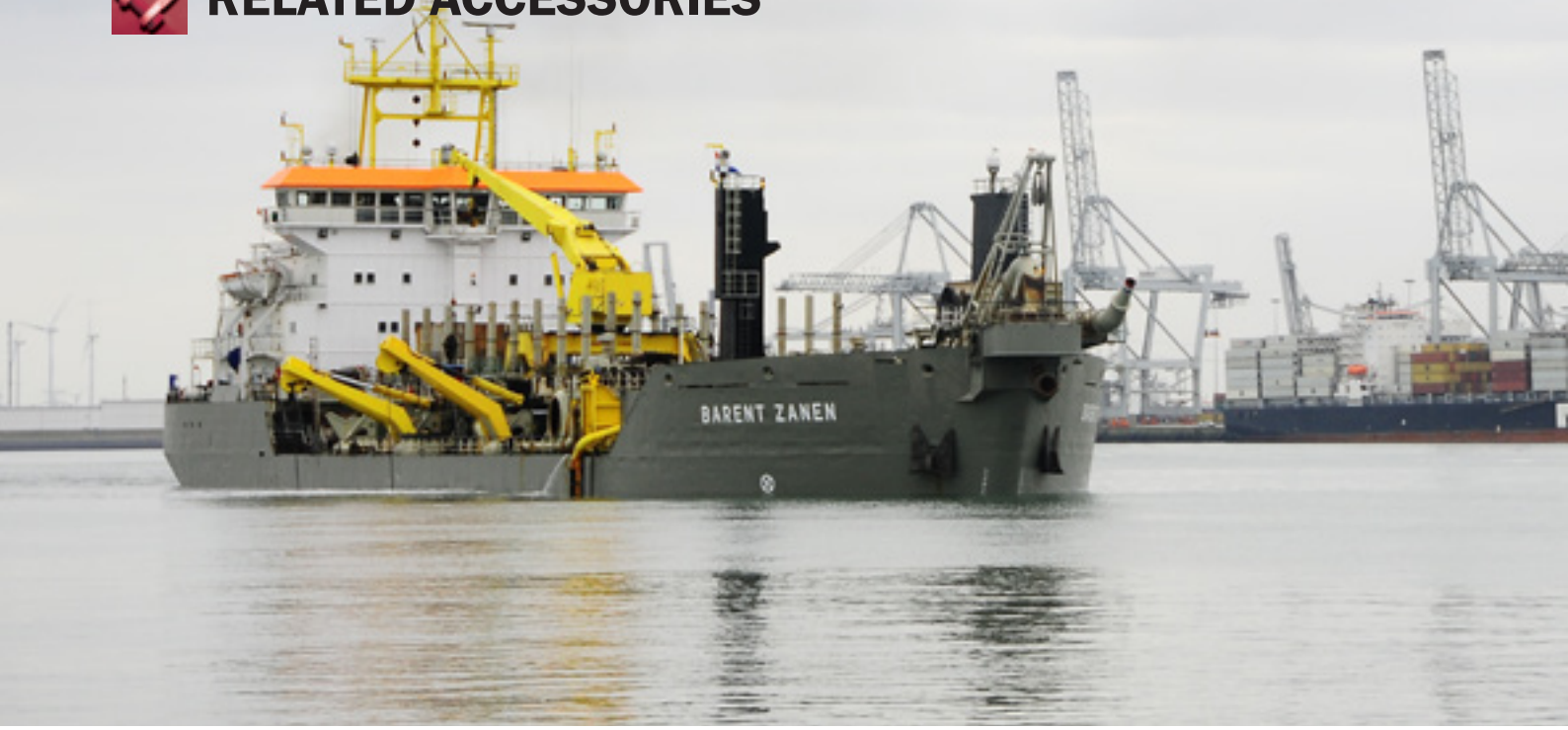
SPOOLER

SPOOLER 40T

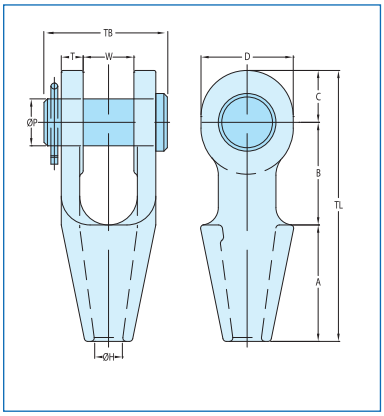
Machine number	10.023
Date manufactured	2002
Machine description	spooler 40T
Purpose	equipment for a controlled transfer of steel wire rope from storage reel to winch
Set-up	stand-alone diesel hydraulic spooler addi-tional shaft support / over and under wind possibilities
Constant tension mode	variable pressure setting / max. up to 4 tons
Free winch mode	back tension depending on reel size
Drum speed	allows tension free rotation of reel
Lifting points	max. 11 rpm
Support shafts	2x 25T shackles incl.
Shaft/ bore adaptors	Ø 60 / 80 / 110 / 200 mm suitable for shaft bore - 301 / 259 / 225 / 165 / 130 / 99 mm
Max. reel weight	40 Tons incl. the reel itself
Max. reel dimensions	flange dia. 2.800 mm, outer width 2100 mm flange dia. 3.400 mm, outer width 2300 mm – under special spooler raised and with an exact shaft fitting in reel
Weight of unit	5 Ton (without reel)
Dimensions unit	overall length 5.480 mm overall width 2.340 mm overall height 2.080 mm (without reel)



RELATED ACCESSORIES



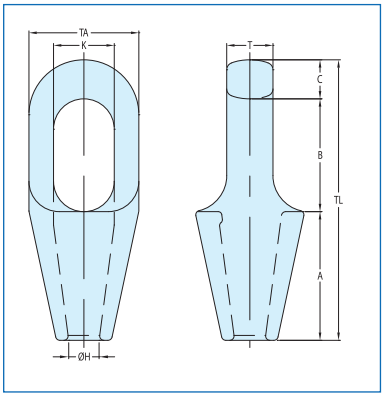
OPEN SPELTER SOCKETS WITH BOLT AND NUT



article number	type no.	for wire Ø mm	dimensions ØP - mm	dimensions inside width jaw - mm
323.551	198 B	11 - 13	25	25
323.552	199 B	14 - 16	30	32
323.573	100 B	18 - 19	35	38
323.584	104 B	20 - 22	41	44
323.581	108 B	23 - 26	51	51
323.572	111 B	27 - 30	57	57
323.571	115 B	31 - 36	63	63
323.568	118 B	37 - 39	70	76
323.567	120 B	40 - 42	76	76
323.565	125 B	43 - 48	89	89
323.593	128 B	49 - 54	95	101
323.546	130 B	55 - 60	108	113
323.560	132 B	61 - 68	121	127
323.557	135 B	69 - 75	127	133
323.556	138 B	76 - 80	133	146
323.555	140 B	81 - 86	140	159
323.585	142 B	87 - 93	152	171
323.553	144 B	94 - 102	178	191

On request: (cotter)pin, galvanised (104 B - 128 B)

CLOSED SPELTER SOCKETS



article number	type no.	for wire Ø mm	T bow - mm	K inside width - mm
328.730	298	11 - 13	22,5	30
328.728	299	14 - 16	26	36
328.746	200	18 - 19	32	42
328.747	201	20 - 22	38	47
328.748	204	23 - 26	44	57
328.749	207	27 - 30	51	65
328.740	212	31 - 36	57	71
328.744	215	37 - 39	63	81
328.750	217	40 - 42	70	83
328.745	219	43 - 48	76	93
323.653	222	49 - 54	82	100

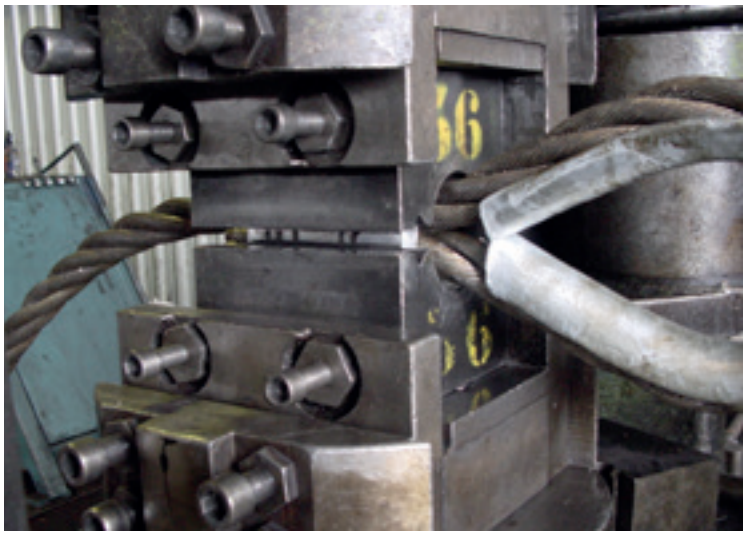
OPEN WEDGE SOCKETS WITH BOLT AND NUT

article number	type no.	for wire Ø mm	dimensions ØP	inside width pin
331.133	0.5 B	9 - 10	20,6	20,5
331.137	1 B	11 - 13	25	25
331.114	2 B	14 - 16	30	31
331.029	3 B	18 - 19	35	38
331.125	4 B	20 - 22	41	44
331.112	5 B	24 - 26	51	51
331.121	6 B	27 - 29	57	57
331.107	7 B	30 - 32	64	63
331.123	8 B	34 - 36	64	70
331.134	9 B	37 - 39	70	77
331.145	10 B	40 - 42	76	76
331.115	11 B	43 - 48	89	89
331.132	12 B	49 - 52	95	101
331.146	13 B	54 - 58	108	114
331.099	14 B	60 - 68	121	127
331.147	15 B	72 - 76	133	146
331.148	16 B	81 - 86	140	159

CROSBY® G-2130 BOW-SHACKLES

article number	WLL tons	pin mm	bow mm	inside width pin - mm
329.267	0,33	6,35	4,85	9,65
329.268	0,50	7,85	6,35	11,9
329.269	0,75	9,65	7,85	13,5
329.270	1	11,2	9,65	16,8
329.271	1,5	12,7	11,2	19,1
329.240	2	16	12,7	20,6
329.241	3,25	19,1	17,5	26,9
329.243	4,75	22,4	20,6	31,8
329.244	6,5	25,4	24,6	36,6
329.245	8,5	28,7	25,4	42,9
329.246	9,5	31,8	28,7	46
329.247	12	35,1	31,8	51,5
329.248	13,5	38,1	35,1	57
329.249	17	41,4	38,1	60,5
329.253	25	51	44,5	73
329.347	35	57	51	82,5
329.355	55	70	66,5	105
329.363	85	82,5	76	127
329.356	120	95,5	92	133

SOLID THIMBLES



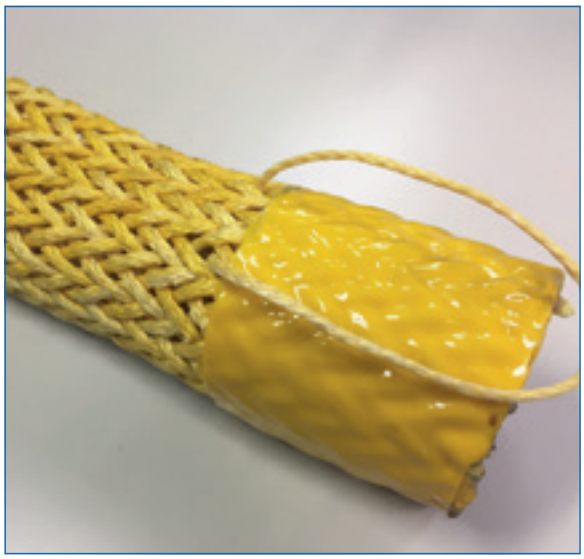
article number	for wire Ø mm	length inch	hole Ø mm	thickness mm
326.413	8	2	14	15
326.416	10	2 1/2	18	18
326.417	12	3	21	20
326.418	14	3 1/2	25	24
326.419	16 - 18	4	30	26
326.420	16 - 18	4	40	26
326.421	20 - 22	5	30	30
326.422	20 - 22	5	40	30
326.423	20 - 22	5	45	30
326.424	24 - 26	6	30	33
324.428	24 - 26	6	40	33
326.425	24 - 26	6	45	33
326.426	24 -26	6	55	33
326.451	28 - 30	7	30	40
326.428	28 - 30	7	40	40
326.415	28 - 30	7	52	40
326.429	28 - 30	7	60	40
326.430	32 - 34	8	30	43
324.400	32 - 34	8	40	43
324.402	32 - 34	8	55	43
326.412	32 - 34	8	70	43
324.409	36 - 38	9	50	47
324.406	36 - 38	9	70	47
334.407	36 - 38	9	90	47
324.408	36 - 38	9	100	47
324.413	40 - 42	10	50	57
326.431	40 - 42	10	70	57
326.432	40 - 42	10	90	57
326.408	40 - 42	10	100	57
324.407	50 - 55	14	100	82
326.434	50 - 56	12 1/2	110	82

Other sizes available on request

K2B THIMBLES

article number	diameter mm	size inch
322.576	17	4
322.586	19	4 1/2
322.588	21	5
322.589	23	5 1/2
322.557	25	6
322.559	30	7
322.561	33	8
322.565	38	9
322.567	41	10
322.569	46	11
322.573	52	12
322.575	60	14
322.584	70	17
322.572	81	19
322.570	92	22
322.574	105	24
322.568	120	26

LANKHORST ROPES PROTECTION SLEEVES



DEFENDER®

A high performance protection sleeve for permanent fixing on a hawser, towing line or pennant. The braided strands offer high abrasion resistance. The sleeve is made in a hollow braid, and can be easily be adjusted to the circumferential size of the rope being protected. The DEFENDER® can be made from different types of yarns, offering extra strength, floatability and other characteristics. Please consult our sales staff for the optimal product in your application.

article number	diameter mm	diameter inch
093.014	44	1 3/4
093.015	60	2 3/8

TIPTO®WEB

TIPTO®WEB sleeves are finished with a protective seam all around. Two large Velcro strips enable the sleeves to be applied easily and to accommodate different diameters of hawsers, two eyelets, one on either side, enable the crew to secure the sleeve in the right position on the hawser. The standard length is 3 meter.

article number	width cm	width inch	hawser for approx. mm	hawser for approx. inch
318.789	33	13	40 - 64	1 5/8 - 2 5/8
318.788	50	19 5/8	66 - 96	2 11/16 - 3 3/4

ENHANCED EYE PROTECTION

Standard polyester hose eye protection suffers a lot from abrasion which is why Lankhorst has replaced it with a polyester Defender® protection: a hollow braided sleeve that can be easily adjusted to the circumferential size of the rope to be protected, offering a high abrasion resistance. It is standard on our jacketed ropes.

POLYFORM A-BUOYS

Polyform A-series are produced in 8 different sizes. Each model is designed and molded in order to offer a maximum of strength in combination with highest possible buoyancy. The wide range, from the smallest to the largest buoy, makes them useful in a wide variety of maritime sectors.

boat size	recommended a fender
- 10'	A0
11' - 16'	A1
17' - 23'	A1 / A2 / A3
24' - 30'	A3 / A4
31' - 45'	A4 / A5
46' - 60'	A5 / A6
60' -	A7

article number	buoyancy kg*	length mm	diameter mm	eye diameter mm	weight kg
A0	5,7 / 3,4	280	210	22	0,60
A1	13,0 / 7,8	380	295	22	1,15
A2	32,0 / 19,2	500	390	25	2,10
A3	52,0 / 31,2	575	460	28	3,10
A4	90,0 / 54,0	710	550	28	4,10
A5	215,0 / 129,0	940	710	28	8,30
A6	405,0 / 243,0	1120	850	35	11,30
A7	670,0 / 402,0	1420	1100	60	21,00

*Gross Buoyancy / Recommended maximum Load. Do not over-inflate! Maximum 0.15 - 0.20 bar of pressure at 20° Celsius. Allowance +/-5%.

colors	ropehold	body
Standard	●	● ● ●
On request	○ ● ●	○ ● ● ● ●

THE VITAL CONNECTION

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