



PRODUCT CATALOG



FROM HEMP TO HMPE

European rope craftsmanship since 1772. Three century onboard with you. Traditional European producer of LIFTING, OFFSHORE, FISHING, TOWING, MOORING and other solutions. Through flexible and fast production, short delivery time worldwide.

Rope development and manufacturing has been our passion since the company was established in Norway in 1772. In 2001 factory moved in Trenčín, Slovakia.

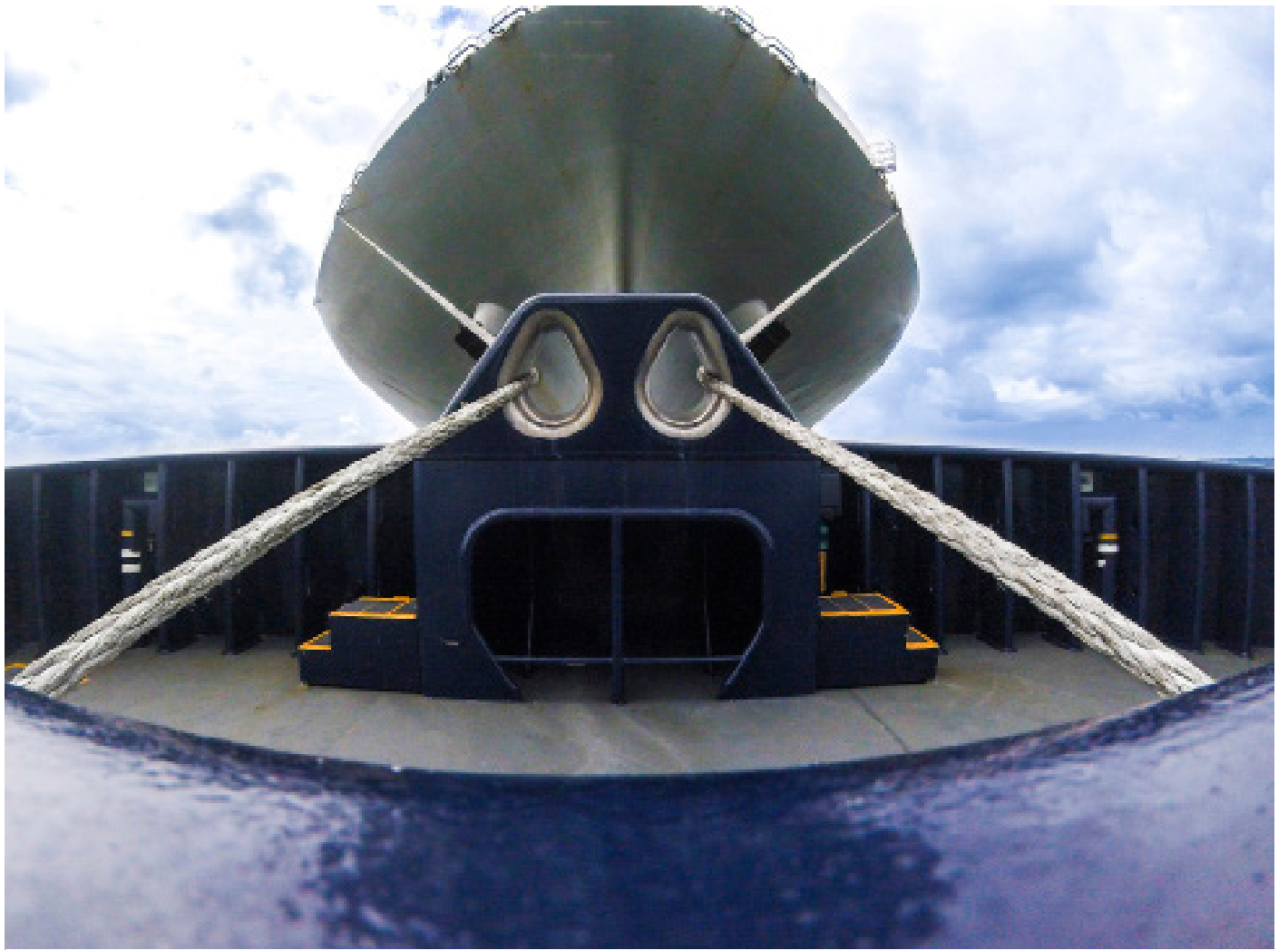
We have come a long way from the times when hemp was the material of choice in the maritime industry. Today, we focus on developing high performance rope solutions based on Ultra-high-molecular-weight polyethylene fibers.

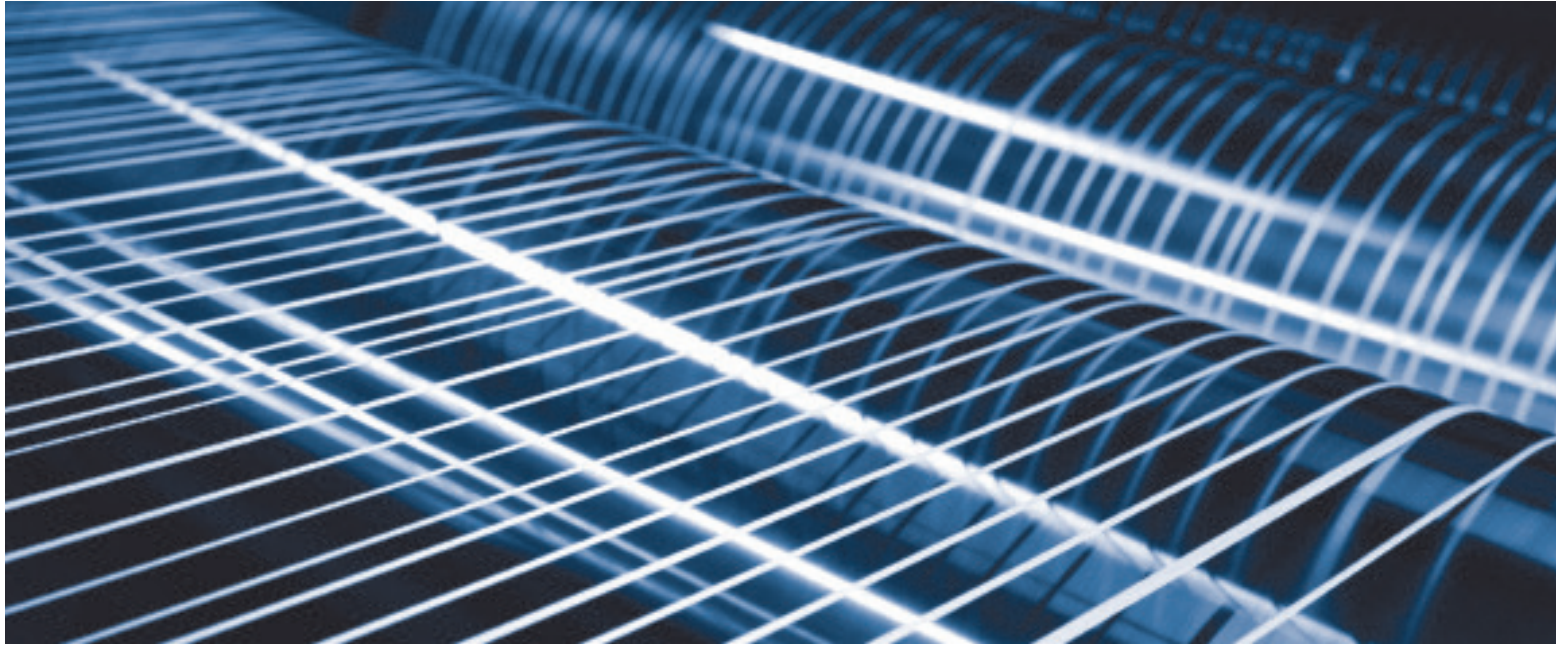
Today, our proprietary Acera™ rope aims for nothing less than changing the rope dynamics in this highly competitive segment. In fact, we made Acera™ to be stronger than steel at just 1/7 of its weight as well as 1/3 of the same strength polyester rope.

Many decades of rope development and manufacturing has taught us what it takes to make great ropes: durability, abrasion resistance, tensile strength and elongation, but the most important thing is that satisfaction of our clients is strongly tied together with trust for TIMM Ropes.

We bring all this to bear when delivering great performing ropes to our customers.

The continuous drive towards making higher performance ropes has increasingly turned our factory into a test facility. The result is that TIMM Ropes has its own R&D department, including our own engineers and specialists. With support from our R&D, you get expert advice and great solutions.





QUALITY IN EVERY FIBRE

Timm's company philosophy is to be proud, honest, agile, straightforward and enduring. These are expressions of quality in everything we do.

Continuous innovation and our ability to react flexibly to the demands of the market are just some of the reasons why TIMM is one of the longest operating companies in the industry. Since our founding in 1772 we strive to be the ones setting the trends, not just follow them.

Timm is a customer focused company. Everything we do is based on meeting customer's expectations and requirements.

As a supplier to this demanding markets: shipping, aquaculture, fishing, offshore and yachting, we are faced with challenging demands every day of the week.

Our great products have to be delivered in the right place, on time, to specifications and to the agreed price.

The people at Timm take pride in the craftsmanship that is our business. Our highly competent R&D department run our products through rigorous testing and respond quickly to special customer requests. Speed is one of our main assets: from the fast response to requests, the efficient production and logistics, to the after sale documentation and certification. Timm provides experience, technical knowledge, support and consultancy. We are reliable and service minded company.

ACERA™ Amundsen 12-strand HMPE rope

Acera™ Amundsen is a DNV GL type approved 12-strand high performance rope made from genuine Acera™ HMPE yarns, which is individually coated through a rotating 360° Lick-roller process.

This unique single yarn coating process demonstrates the uncompromising commitment to the quality standards of Acera™. Single yarn coating is proven to significantly enhance internal and external abrasion resistance, and extend service life and strength. 12 strand ropes are regarded as the best rope construction, and has become the most common construction for HMPE ropes. Acera™ Amundsen is the alternative to the cumbersome steel wire ropes. It is stronger and safer, with significantly less snap-back/recoil. The corresponding weight is therefore 7 times lower. When replacing conventional fiber ropes, the reduction in diameter leads to significant savings in weight (60%), space and handling. This reduces the total time required for mooring operations and fuel consumption.



„The deck Crew in Alaska are very pleased with Acera product, durable, strong, and last for long time. This vessel has used Acera from the beginning of when we started dealing with you, and has lots of experience with other HMPE from before.“

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SUITABLE



Fishery



Lifting



Offshore



Mooring



Towing



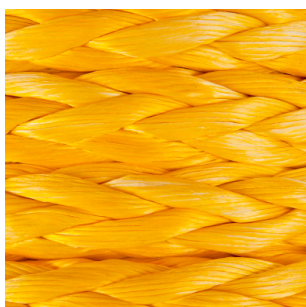
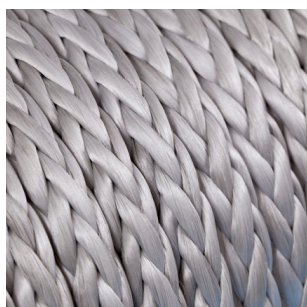
KEY BENEFITS

- Ease of handling
- Easy to splice
- Easy to inspect
- High construction stability
- Well balanced; 6 left and 6 right strands
- Outsized surface contact - better abrasion resistance
- No rotation under load
- Single yarn coating, extended service life



PRODUCT FEATURES

Construction	12-strand plaited core
Fiber	Acera HMPE
Specific gravity	0,97 (floating)
Colours	Platinum, Yellow, Blue
UV resistance	Excelent
Abbrasion resistance	Excelent
Acid resistance	Excelent
Alkali resistance	Excelent
Most chemicals resistance	Excelent
Water resistance	Excellent (0% absorption)
Heat resistance	Low (145-150 melting)
Elongation	Low (2-3% at break)



Would you want to know more? →  → www.timmropes.com

diameter DIA. (mm)	Linear Density (g/m)	MBL spliced (t)	MBL spliced (kN)	MBL unspliced (t)	MBL unspliced (kN)	diameter DIA. (inch)	MBL spliced (lbs)	MBL unspliced (lbs)
4	11	1.7	17	1.9	19	1/8"	3.822	4.271
6	22	3.7	36	4.1	40	1/4"	8.093	8.992
8	38	6.3	62	7	69	5/16"	13.961	15.512
10	57	9.7	95	10.7	105	13/32"	21.244	23.605
12	81	13.8	135	15.3	150	1/2"	30.349	33.047
14	108	18.4	180	20.4	200	9/16"	40.466	44.962
16	144	23.5	230	26	255	5/8"	51.594	57.326
18	174	29.1	285	32.1	315	3/4"	63.733	70.815
20	212	34.7	340	38.7	380	13/16"	76.884	85.427
22	254	41.3	405	45.9	450	7/8"	91.047	101.164
24	299	47.9	470	53	520	1"	105.210	116.900
26	350	55.1	540	61.2	600	1_1/16"	121.397	134.885
28	401	62.7	615	69.9	685	1_1/8"	138.594	153.994
30	456	71.4	700	79	775	1_1/4"	156.804	174.227
32	514	79.5	780	88.2	865	1_5/16"	175.013	194.459
34	575	88.7	870	98.4	965	1_3/8"	195.246	216.940
36	640	98.4	965	109.1	1070	1_1/2"	216.490	240.545
38	707	108.1	1060	119.8	1175	1_9/16"	237.735	264.150
40	778	117.8	1155	131	1285	1_5/8"	259.991	288.879
44	929	140.2	1375	155.5	1525	1_3/4"	308.550	342.833
48	1091	163.2	1600	181	1775	2"	359.131	399.035
52	1266	187.6	1840	208.5	2045	2_1/8"	413.760	459.733
56	1453	213.6	2095	237.6	2330	2_1/4"	471.423	523.804
60	1652	241.7	2370	268.7	2635	2_1/2"	533.133	592.370
64	1862	270.7	2655	300.8	2950	2_5/8"	596.866	663.185
68	2086	301.3	2955	335	3285	2_3/4"	664.646	738.496
72	2328	333.4	3270	370.7	3635	3"	735.461	817.179
76	2583	367.1	3600	407.9	4000	3_1/8"	809.310	899.234
80	2851	401.8	3940	446.1	4375	3_1/4"	885.183	983.537
82	2990	419.7	4116	466.3	4573	3_3/8"	925.236	1.028.040
88	3425	475.2	4660	528.2	5180	3_5/8"	1.048.048	1.164.498
96	4049	554.2	5435	615.9	6040	4"	1.222.048	1.357.831
100	4380	596	5845	662.3	6495	4_1/16"	1.314.106	1.460.118
102	4550	617.1	6052	685.7	6724	4_1/8"	1.360.439	1.511.599
104	4724	638.9	6265	709.7	6960	4_1/4"	1.408.188	1.564.653
108	5079	682.7	6695	758.7	7440	4_1/2"	1.505.304	1.672.560
110	5262	705.1	6915	783.7	7685	4_9/16"	1.554.874	1.727.638
112	5447	728.1	7140	811	7953	4_5/8"	1.609.097	1.787.886
116	5828	774.3	7595	860.6	8440	4_3/4"	1.707.630	1.897.367
120	6221	822.4	8065	913.7	8960	5"	1.812.840	2.014.266



CERTIFICATE




Would you want to know more? --  -- www.timmropes.com

ACERA™ daGama 12-strand HMPE rope with cover

Acera™ daGama is constructed with a 12-strand core, with a tight 24 or 32 braided cover. The 3-step coating process ensures an outstanding resistance to particle ingress. It also protects against internal and external abrasion and prevents the core and cover from moving independently.

This unique single yarn coating process demonstrates the uncompromising commitment to the quality standards of Acera™. Single yarn coating is proven to significantly enhance internal and external abrasion resistance, and extend service life and strength. 12 strand ropes are regarded as the best rope construction, and has become the most common construction for HMPE ropes. Acera™ Amundsen is the alternative to the cumbersome steel wire ropes. It is stronger and safer, with significantly less snap-back/recoil. The corresponding weight is therefore 7 times lower. When replacing conventional fiber ropes, the reduction in diameter leads to significant savings in weight (60%), space and handling. This reduces the total time required for mooring operations and fuel consumption.



I had feedback from the vessel manager in British Columbia, where we send 2 sts of 300 ft bridles a month or so ago, and his comment to the new bridles, which was much longer than before was “the vessel has never fished better before”.

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**SUITABLE**


Fishery

Lifting


Offshore

Mooring

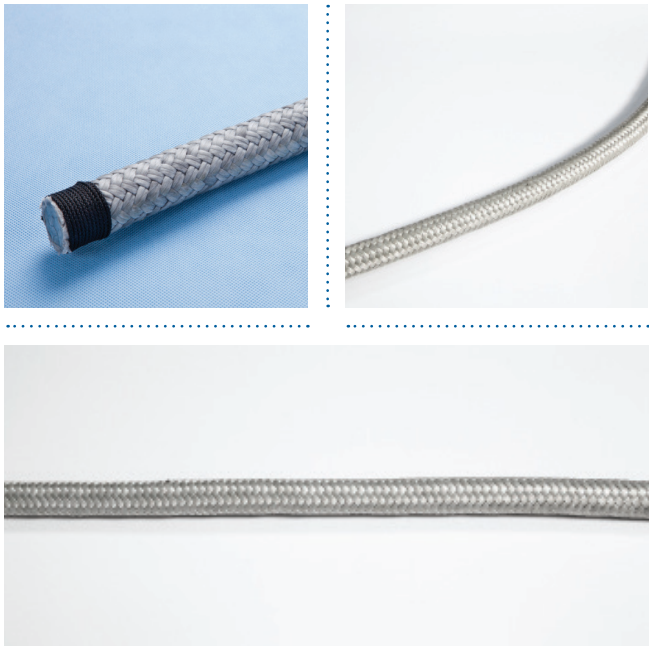
Towing

**KEY BENEFITS**

- Resistant to external damage and particle ingress
- Single yarn coating - high abrasion resistance
- Ease of handling
- High construction stability
- Well balanced; 6 left and 6 right strands
- No rotation under load
- Optional HT polyester cover available

**PRODUCT FEATURES**

Construction	12-strand plaited core 24 or 32 braided cover
Fiber	Acera HMPE
Specific gravity	ACERA cover 0,973 (floating) PES cover 1,15 (sinking)
Colours	Platinum
UV resistance	Excelent
Abbrasion resistance	Excelent
Acid resistance	Excelent
Alkali resistance	Excelent
Most chemicals resistance	Excelent
Water resistance	Excellent (0% absorption)
Elongation	Low (2-3% at break)
Colours polyester cover	White
Colours Acera cover	Platinum, Yellow



diameter DIA. (mm)	Linear Density (g/m)*	MBL spliced (t)	MBL spliced (kN)	MBL unspliced (t)	MBL unspliced (kN)	diameter DIA. (inch)	MBL spliced (lbs)	MBL unspliced (lbs)
6	22	3.7	36	4.1	40	1/4"	8.093	8.992
8	38	6.3	62	7	69	5/16"	13.961	15.512
10	57	9.7	95	10.7	105	13/32"	21.244	23.605
12	81	13.8	135	15.3	150	1/2"	30.349	33.721
14	108	18.4	180	20.4	200	9/16"	40.466	44.962
16	144	23.5	230	26	255	5/8"	51.594	57.326
18	174	29.1	285	32.1	315	3/4"	63.733	70.815
20	212	34.7	340	38.7	380	13/16"	76.884	85.427
22	254	41.3	405	45.9	450	7/8"	91.047	101.164
24	299	47.9	470	53	520	1"	105.210	116.900
26	350	55.1	540	61.2	600	1_1/16"	121.397	134.885
28	401	62.7	615	69.9	685	1_1/8"	138.594	153.994
30	456	71.4	700	79	775	1_1/4"	156.804	174.227
32	514	79.5	780	88.2	865	1_5/16"	175.013	194.459
34	575	88.7	870	98.4	965	1_3/8"	195.246	216.940
36	640	98.4	965	109.1	1070	1_1/2"	216.490	240.545
38	707	108.1	1060	119.8	1175	1_9/16"	237.735	264.150
40	778	117.8	1155	131	1285	1_5/8"	259.991	288.879
44	929	140.2	1375	155.5	1525	1_3/4"	308.550	342.833
48	1091	163.2	1600	181	1775	2"	359.131	399.035
52	1266	187.6	1840	208.5	2045	2_1/8"	413.760	459.733
56	1453	213.6	2095	237.6	2330	2_1/4"	471.423	523.804
60	1652	241.7	2370	268.7	2635	2_1/2"	533.133	592.370
64	1862	270.7	2655	300.8	2950	2_5/8"	596.866	663.185
68	2086	301.3	2955	335	3285	2_3/4"	664.646	738.496
72	2328	333.4	3270	370.7	3635	3"	735.461	817.179
76	2583	367.1	3600	407.9	4000	3_1/8"	809.310	899.234
80	2851	401.8	3940	446.1	4375	3_1/4"	885.183	983.537
82	2990	419.7	4116	466.3	4573	3_3/8"	925.236	1.028.040
88	3425	475.2	4660	528.2	5180	3_5/8"	1.048.048	1.164.498
92	3731	514.3	5044	571.5	5604	3_3/4"	1.133.834	1.259.816
96	4049	554.2	5435	615.9	6040	4"	1.222.048	1.357.831

* Linear Density only for load-bearing part. Cover type must be specify.



CERTIFICATE



Would you want to know more? --



-- www.timmropes.com

ACERA™ Barentz 12-strand HMPE rope with individually cover of each strand

Acera™ Barentz is a unique 12-strand rope, with a core of Acera™ yarns with less twist for maximum strength. Each strand is protected by a tight 24 braided cover, to ensure each individual strand has maximum protection from wear and abrasion in rugged conditions. This construction results in an evenly round shaped rope.

This special construction provides significantly increased safety properties, as the covers act as snap-back/recoil arrestors. In combination with the low elongation on HMPE fibers, there is minimal risk of potentially damaging backlash if a mooring line breaks.

Acera™ Barentz is made from Acera™ genuine HMPE yarns, which are individually coated through a rotating 360° Lick-roller process. This unique single yarn coating process demonstrates the uncompromising commitment to the quality standards of Acera™. Single yarn coating is proven to significantly enhance internal and external abrasion resistance, and extend service life and strength.

Optional HT polyester cover available.

Acera™ Barentz with Acera™ cover will float; while the polyester cover will make it sink.



PRODUCT FEATURES

Construction	12-strand-individually braided covers
Fiber	Acera HMPE - optional PES cover
Specific gravity	0,973 (floating)
Colours	Natural
UV resistance	Excellent
Abbrasion resistance	Excellent
Acid resistance	Excellent
Alkali resistance	Excellent
Most chemicals resistance	Excellent
Water resistance	Excellent (0% absorption)
Heat resistance	Low (145-150 melting)
Elongation	Low (2-3% at break)
Colours polyester cover	White
Colours Acera cover	Yellow
Fiber toxicity	Biologically inert, IARC classified 3
Weathering ISO 12224	Excellent
Couting toxicity	Water based, solvent free, REACH approved



SUITABLE



Fishery



Lifting



Offshore



Mooring



Towing



KEY BENEFITS

- Increased safety (snap-back arrestor)
- High strength-to-weight
- Available in high diameters
- Extra long durability
- Excellent abrasion resistance
- Reduced external damage and particle ingress
- Easy to splice and repair
- Easy to inspect
- Extremely good on winches, bits and capstans

Would you want to know more? --



-- www.timmropes.com

diameter DIA. (mm)	Linear Density (g/m)	MBL spliced (t)	MBL spliced (kN)	MBL unspliced (t)	MBL unspliced (kN)	diameter DIA. (inch)	MBL spliced (lbs)	MBL unspliced (lbs)
20	212	34.7	340	38.7	380	13/16"	76.884	85.427
22	254	41.3	405	45.9	450	7/8"	91.047	101.164
24	299	47.9	470	53	520	1"	105.210	116.900
26	350	55.1	540	61.2	600	1_1/16"	121.397	134.885
28	401	62.7	615	69.9	685	C	138.594	153.994
30	456	71.4	700	79	775	1_1/4"	156.804	174.227
32	514	79.5	780	88.2	865	1_5/16"	175.013	194.459
34	575	88.7	870	98.4	965	1_3/8"	195.246	216.940
36	640	98.4	965	109.1	1070	1_1/2"	216.490	240.545
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40	778	117.8	1155	131	1285	1_5/8"	259.991	288.879
44	929	140.2	1375	155.5	1525	1_3/4"	308.550	342.833
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92	3731	514.3	5044	571.5	5604	3_3/4"	1.133.834	1.259.816
96	4049	554.2	5435	615.9	6040	4"	1.222.048	1.357.831



CERTIFICATE



ACERA™ Eye-and-Eye Slings High Performance slings – up to mbl 728 ton

Slings made from High Modulus Polyethylene (HMPE) have set new standards for lifting gear. The Acera™ slings are made from Acera™ Amundsen 12 strand ropes.

Acera™ Amundsen are high performance ropes made from genuine Acera™ HMPE yarns, which are individually coated through a rotating 360° Kiss-roller process. Single yarn coating is proven to significantly enhance internal and external abrasion resistance, and extend service life and strength. The sling eyes have Protech™ cover. A proprietary braided protection made from Acera™ yarn. The splices are protected by a weaved polyester Y-cover.

All Acera™ slings are produced in accordance with own technical file based on ISO 18264:2016 standard. The eyes are hand-spliced with our own positive locking tuck variant, ensuring anti-slip under all circumstances. Acera™ slings are the alternative to cumbersome steel wires. They are stronger and safer. The corresponding weight is more than 7 times lower. Compared to conventional fiber ropes, the resulting reduction in diameter leads to significant savings in weight (60%), space and handling. Acera™ slings provide a safer and more productive lifting operation. The light weight, ultra strong Acera™ slings are available at a market competitive price and can be customised to suit numerous applications.



SUITABLE



Lifting



Offshore



Mooring



Towing



KEY BENEFITS

- Less risk to the crew
- Less injuries
- 1/7 of weight steel wire ropes.
- Easier handling
- Faster operation
- Less personnel needed
- Higher lifting capacity
- Less back injuries
- No contact damage
- No fraying or sharp edges
- Superior bending flex fatigue
- Easy to inspect and repair



PRODUCT FEATURES

Construction	12-strand plaited core
Fiber	Acera™ HMPE
Specific gravity	HMPE cover 0,97 (floating)
Colours	Platinum
UV resistance	Excelent
Abbrasion resistance	Excelent
Acid resistance	Excelent
Alkali resistance	Excelent
Most chemicals resistance	Excelent
Cold & frost resistance	Excellent
Water resistance	Excellent (0% absorption)
Heat resistance	Low (145-150 melting)
Elongation	Low (2-3% at break)
Oil content in fiber	>0,1%
Chemical resistance	Excellent

Would you want to know more? –  – www.timmropes.com

ACERA™ Eye-and-Eye Slings High Performance slings – up to mbl 728 ton

diameter DIA. (mm)	MBL spliced (t)	MBL spliced (kN)	Work Load Limit (WLL) vertical and choker hitches SAFETY FACTOR 7:1 (vertical (t))	Work Load Limit (WLL) vertical and choker hitches SAFETY FACTOR 7:1 (vertical (kN))
6	3.7	36	0.52	5.14
8	6.3	62	0.90	8.86
10	9.7	95	1.38	13.57
12	13.8	135	1.97	19.29
14	18.4	180	2.62	25.71
16	23.5	230	3.35	32.86
18	29.1	285	4.15	40.71
20	34.7	340	4.95	48.57
22	41.3	405	5.90	57.86
24	47.9	470	6.85	67.14
26	55.1	540	7.87	77.14
28	62.7	615	8.96	87.86
30	71.4	700	10.20	100
32	79.5	780	11.36	111.43
34	88.7	870	12.67	124.29
36	98.4	965	14.06	137.86
38	108.1	1060	15.44	151.43
40	117.8	1155	16.83	165
44	140.2	1375	20.03	196.43
48	163.2	1600	23.31	228.57
52	187.6	1840	26.80	262.86
56	213.6	2095	30.52	299.29
60	241.7	2370	34.52	338.57
64	270.7	2655	38.68	379.29
68	301.3	2955	43.05	422.14
72	333.4	3270	47.64	467.14
76	367.1	3600	52.44	514.29
80	401.8	3940	57.40	562.86
84	438	4295	62.57	613.57
88	475.2	4660	67.88	665.71
92	514.3	5044	73.48	720.57
96	554.2	5435	79.17	776.43
100	596	5845	85.15	835
102	617.1	6052	88.16	864.57
104	638.9	6265	91.27	895
108	682.7	6695	97.53	956.43
112	728.1	7140	104.01	1020

Nominal diameter as per definition in ISO 1968. Minimum strength defined as MBF/ MBL (Minimum Breaking Force, minimum breakload) of spliced application, and measured in kilogram force/kp, tested according to ISO 2307 and verified by DNV GL. Work Load Limits (WLL) is measured in metric tons and kilonewtons based on a safety factor 7:1, as defined by the Machinery Directive 2006/42/EC.



CERTIFICATE



Would you want to know more? --  -- www.timmropes.com

ACERA™ Grommets High Performance slings – up to mbl 1 297 ton

Grommets made from High Modulus Polyethylene (HMPE) have set new standards for lifting gear. The Acera™ grommets are made from Acera™ Amundsen 12 strand ropes.

Acera™ Amundsen are high performance ropes made from genuine Acera™ HMPE yarns, which are individually coated through a rotating 360° Kiss-roller process. Single yarn coating is proven to significantly enhance internal and external abrasion resistance, and extend service life and strength. The grommets eyes have Protech™ hollow braid protection. A proprietary braided protection made from Acera™ yarn.

All Acera™ grommets are produced in accordance with own technical file based on ISO 18264:2016 standard. The eyes are hand-spliced with our own positive locking tuck variant, ensuring anti-slip under all circumstances. Acera™ grommets are the alternative to cumbersome steel wires. They are stronger and safer. The corresponding weight is



PRODUCT FEATURES

Construction	12-strand plaited
Fiber	Acera™ HMPE
Specific gravity	HMPE cover 0,97 (floating)
Colours	Platinum
UV resistance	Excelent
Abbrasion resistance	Excelent
Acid resistance	Excelent
Alkali resistance	Excelent
Most chemicals resistance	Excelent
Cold & frost resistance	Excellent
Water resistance	Excellent (0% absorption)
Heat resistance	Low (145-150 melting)
Elongation	Low (2-3% at break)
Oil content in fiber	>0,1%
Chemical resistance	Excellent



SUITABLE



Lifting



Offshore



Mooring



Towing



KEY BENEFITS

- Less risk to the crew
- Less injuries
- 1/7 of weight steel wire ropes.
- Easier handling
- Faster operation
- Less personnel needed
- Higher lifting capacity
- Less back injuries
- No contact damage
- No fraying or sharp edges
- Superior bending flex fatigue
- Easy to inspect and repair

diameter DIA. (mm)	MBL spliced (t)	MBL spliced (kN)	Work Load Limit (WLL) vertical and choker hitches SAFETY FACTOR 7:1 (vertical (t))	Work Load Limit (WLL) vertical and choker hitches SAFETY FACTOR 7:1 (vertical (kN))
6	6.53	64	0.93	9.14
8	11.26	110.4	1.61	15.77
10	17.13	168	2.45	24
12	24.47	240	3.5	34.29
14	32.63	320	4.66	45.71
16	41.6	408	5.94	58.29
18	51.39	504	7.34	72
20	62	608	8.86	86.86
22	73.42	720	10.49	102.86
24	84.84	832	12.12	118.86
26	97.89	960	13.98	137.14
28	111.76	1096	15.97	156.57
30	126.45	1240	18.06	177.14
32	141.13	1384	20.16	197.71
34	157.44	1544	22.49	220.57
36	174.58	1712	24.94	244.57
38	191.71	1880	27.39	268.57
40	209.65	2056	29.95	293.71
44	248.81	2440	35.54	348.57
48	289.6	2840	41.37	405.71
52	333.65	3272	47.66	467.43
56	380.15	3728	54.31	532.57
60	429.91	4216	61.42	602.29
64	481.31	4720	68.76	674.29
68	535.97	5256	76.57	750.86
72	593.07	5816	84.72	830.86
76	652.62	6400	93.23	914.29
80	713.8	7000	101.97	1000
84	778.25	7632	111.18	1090.29
88	845.15	8288	120.74	1184
92	914.32	8966.4	130.62	1280.91
96	985.46	9664	140.78	1380.57
100	1059.69	10392	151.38	1484.57
102	1097.06	10758.4	156.72	1536.91
104	1135.56	11136	162.22	1590.86
108	1213.88	11904	173.41	1700.57
112	1297.58	12724.8	185.37	1817.83

Nominal diameter as per definition in ISO 1968. Minimum strength defined as MBF/ MBL (Minimum Breaking Force, minimum breakload) of spliced application, and measured in kilogram force/kp, tested according to ISO 2307 and verified by DNV GL. Work Load Limits (WLL) is measured in metric tons and kilonewtons based on a safety factor 7:1, as defined by the Machinery Directive 2006/42/EC.



CERTIFICATE



ACERA™ Double-Grommets High Performance slings – up to mbl 2 595 ton

Grommets made from High Modulus Polyethylene (HMPE) have set new standards for lifting gear. The Acera™ grommets are made from Acera™ Amundsen 12 strand ropes.

Acera™ Amundsen are high performance ropes made from genuine Acera™ HMPE yarns, which are individually coated through a rotating 360° Kiss-roller process. Single yarn coating is proven to significantly enhance internal and external abrasion resistance, and extend service life and strength. The grommets eyes have Protech™ hollow braid protection. A proprietary braided protection made from Acera™ yarn.

All Acera™ grommets are produced in accordance with own technical file based on ISO 18264:2016 standard. The eyes are hand-spliced with our own positive locking tuck variant, ensuring anti-slip under all circumstances. Acera™ grommets are the alternative to cumbersome steel wires. They are stronger and safer. The corresponding weight is more than 7 times lower.

Compared to conventional fiber ropes, the resulting reduction in diameter leads to significant savings in weight (60%), space and handling.

Acera™ grommets provide a safer and more productive lifting operation. The light weight, ultra strong Acera™ slings are available at a market competitive price and can be customised to suit numerous applications.



PRODUCT FEATURES

Construction	12-strand plaited
Fiber	Acera™ HMPE
Specific gravity	HMPE cover 0,97 (floating)
Colours	Platinum
UV resistance	Excelent
Abbrasion resistance	Excelent
Acid resistance	Excelent
Alkali resistance	Excelent
Most chemicals resistance	Excelent
Cold & frost resistance	Excellent
Water resistance	Excellent (0% absorption)
Heat resistance	Low (145-150 melting)
Elongation	Low (2-3% at break)
Oil content in fiber	>0,1%
Chemical resistance	Excellent



SUITABLE



Lifting



Offshore



Mooring



Towing



KEY BENEFITS

- Less risk to the crew
- Less injuries
- 1/7 of weight steel wire ropes.
- Easier handling
- Faster operation
- Less personnel needed
- Higher lifting capacity
- Less back injuries
- No contact damage
- No fraying or sharp edges
- Superior bending flex fatigue
- Easy to inspect and repair



Would you want to know more? --  -- www.timmropes.com

ACERA™ Double-Grommets High Performance slings – up to mbl 2 595 ton

diameter DIA. (mm)	MBL spliced (t)	MBL spliced (kN)	Work Load Limit (WLL) vertical and choker hitches SAFETY FACTOR 7:1 (vertical (t))	Work Load Limit (WLL) vertical and choker hitches SAFETY FACTOR 7:1 (vertical (kN))
6	13.05	128	1.86	18.29
8	22.52	220.8	3.22	31.54
10	34.26	336	4.89	48.00
12	48.95	480	6.99	68.57
14	65.26	640	9.32	91.43
16	83.21	816	11.89	116.57
18	102.79	1008	14.68	144.00
20	124	1216	17.71	173.71
22	146.84	1440	20.98	205.71
24	169.68	1664	24.24	237.71
26	195.78	1920	27.97	274.29
28	223.52	2192	31.93	313.14
30	252.89	2480	36.13	354.29
32	282.26	2768	40.32	395.43
34	314.89	3088	44.98	441.14
36	349.15	3424	49.88	489.14
38	383.42	3760	54.77	537.14
40	419.31	4112	59.90	587.43
44	497.62	4880	71.09	697.14
48	579.2	5680	82.74	811.43
52	667.31	6544	95.33	934.86
56	760.3	7456	108.61	1065.14
60	859.83	8432	122.83	1204.57
64	962.62	9440	137.52	1348.57
68	1071.93	10512	153.13	1501.71
72	1186.14	11632	169.45	1661.71
76	1305.24	12800	186.46	1828.57
80	1427.61	14000	203.94	2000
84	1556.5	15264	222.36	2180.57
88	1696.8	16576	241.47	2368
92	1837.11	17932.8	261.24	2561.83
96	1970.92	19328	281.56	2761.14
100	2119.39	20784	302.77	2969.14
102	2194.11	21516.8	313.44	3073.83
104	2271.12	22272	324.45	3181.71
108	2427.75	23808	346.82	3401.14
112	2595.15	25449.6	370.74	3635.66

Nominal diameter as per definition in ISO 1968. Minimum strength defined as MBF/ MBL (Minimum Breaking Force, minimum breakload) of spliced application, and measured in kilogram force/kp, tested according to ISO 2307 and verified by DNV GL. Work Load Limits (WLL) is measured in metric tons and kilonewtons based on a safety factor 7:1, as defined by the Machinery Directive 2006/42/EC.



CERTIFICATE



Would you want to know more? --  -- www.timmropes.com

TERRALINE™ 12 12-strand POLYESTER rope

The engineers at Timm have managed to design a unique 12-strand polyester rope, which delivers over twice the strength of conventional polyester ropes – with a breaking strength 150% above ISO standard.

Timm has produced great ropes since 1772, and constructed our first polyester rope in 1952. Polyester is a particularly reliable fiber, and has proven to be the most durable of the conventional fibers used in ropes. Rope testing with DNV GL – at the Ormen Lange testlab in Norway – also proved that the subsea breaking strength (MBL) transcends the MBL from the standard ISO 2307 dry test procedure.

The peak performance of the Terraline 12 is obtained mainly through three key elements:

1. Super HT polyester fibers
2. Single yarn marine coating
3. Unique 12-strand MaxLoad design

The Timm engineers have combined the experience from Acera™ high performance HMPE ropes, with an innovative 12-strand rope construction.

This MaxLoad design is based on a set of unconventional yarn twist/strand laying/rope design ratios, and the use of new tools for simultaneous tensioning of all filaments, yarns and strands respectively.

The result is an unparalleled high performance solution which outperforms other traditional polyester ropes.



PRODUCT FEATURES

Construction	12-strand plaited
Fiber	Polyethylene Terephthalate - Super HT Polyester Super High Tenacity and high adhesive
Specific gravity	1,37 (sinking)
Colours	White
UV resistance	Excelent
Abbrasion resistance	Excelent
Acid resistance	Good
Alkali resistance	Good
Cold & frost resistance	Very Good +
Water resistance	Excellent (0.5% absorption)
Heat resistance	Moderate (260°C melting)
Elongation	Moderate (10% at break)
Oil content in fiber	>0,1%



SUITABLE



Fishery



Mooring



Towing



Offshore



KEY BENEFITS

- High strength, both wet and dry
- Great abrasion and UV resistance
- Easy to splice and repair
- Low bending ratio
- Lower elongation
- Available in very long length
- Low coefficient of friction
- High melting point (260°C)



Would you want to know more? –  – www.timmropes.com

TERRALINE™ 12 12-strand POLYESTER rope

diameter DIA. (mm)	Linear Density (g/m)	MBL spliced (t)	MBL spliced (kN)	MBL unspliced (t)	MBL unspliced (kN)	diameter DIA. (inch)	MBL spliced (lbs)	MBL unspliced (lbs)
10	76	4	39	4.4	43	13/32"	8.767	9.667
12	109	5.6	55	6.3	62	1/2"	12.364	13.938
14	148	7.7	75	8.5	83	9/16"	16.86	18.659
16	195	9.8	96	10.9	107	5/8"	21.58	24.054
18	245	12.3	121	13.7	134	3/4"	27.201	30.124
20	303	15.1	148	16.7	164	13/16"	33.271	36.869
22	367	18.2	178	20.1	197	7/8"	40.016	44.287
24	437	21.4	210	23.8	233	1"	47.142	52.380
26	513	25	245	27.7	272	1_1/16"	55.033	61.148
28	595	28.8	282	32	314	1_1/8"	63.531	70.590
30	683	32.9	322	36.5	358	1_1/4"	72.433	80.481
32	777	37.2	365	41.3	405	1_5/16"	81.943	91.047
34	877	41.8	410	46.4	455	1_3/8"	92.059	102.288
36	983	46.6	457	51.8	508	1_1/2"	102.782	114.203
38	1095	51.7	507	57.5	564	1_9/16"	114.113	126.792
40	1214	57.1	560	63.4	622	1_5/8"	125.848	139.831
44	1468	68.6	672	76.2	747	1_3/4"	151.139	167.932
46	1605	74.6	732	83	814	1_13/16"	164.695	182.994
48	1747	81	795	90	883	1_57/64"	178.655	198.506
50	1896	87.6	859	97.4	955	1_31/32"	193.223	214.692
52	2051	94.5	927	105	1030	2_1/8"	208.397	231.553
56	2378	108.9	1068	121	1187	2_1/4"	240.163	266.848
58	2551	116.6	1143	129.5	1270	2_9/32"	256.956	285.507
60	2730	124.4	1220	138.2	1355	2_1/2"	274.154	304.615
64	3106	140.8	1381	156.4	1534	2_5/8"	310.370	344.856
68	3506	158.2	1551	175.8	1724	2_3/4"	348.813	387.570
72	3931	176.5	1731	196.2	1924	3"	389.278	432.531
76	4380	195.8	1921	217.6	2134	3_1/8"	431.767	479.741
80	4853	212.7	2120	240.1	2355	3_1/4"	476.481	529.424
84	5350	237.4	2328	263.8	2587	3_3/8"	523.421	581.579
88	5872	259.6	2546	288.5	2829	3_15/32"	572.385	635.983
92	6418	282.8	2773	314.2	3081	3_5/8"	623.371	692.635
96	6988	306.8	3009	340.9	3343	4"	676.381	751.534
100	7582	331.8	3254	368.7	3616	4_1/16"	731.616	812.907
102	7888	344.8	3381	383	3756	4_1/64"	759.942	844.380
106	8519	371.2	3640	412.4	4044	4_1/4"	818.213	909.125
110	9174	398.5	3908	442.8	4342	4_9/16"	878.499	976.110
112	9510	412.5	4046	458.3	4495	4_5/8"	909.455	1.010.505



CERTIFICATE



Would you want to know more? --



-- www.timmropes.com

TERRALINE™ Duodec² Double braided 12-strand Polyester rope

Timm has produced great ropes since 1772, and we constructed the first polyester rope in 1952. Polyester is a particularly reliable fiber, and has proven to be the most durable of the conventional fibers used in ropes.

The engineers at Timm have managed to design a unique double braided, 12- strand polyester rope, which delivers over twice the strength of conventional polyester ropes– with a breaking strength 150% above ISO standard.

Rope testing with DNV GL – at the Ormen Lange testlab in Norway also proved that the subsea breaking strength (MBL) transcends the MBL from the standard ISO 2307 dry test procedure.

The peak performance of the Terraline Duodec is obtained mainly through two key elements:

1. Super HT polyester bers
2. Unique 12-strand MaxLoad design – twisting and laying of yarn and strands

The Timm engineers have combined the experience from Acera™ high performance HMPE ropes, with an innovative “twist” of the traditional 12-strand rope construction. This axLoad design is based on a set of unconventional yarn twist/strand laying/ rope design ratios, and the use of new tools for simultaneous tensioning of all laments, yarns and strands respectively.



PRODUCT FEATURES

Construction	12-strand plaited 24-braided cover
Fiber	Polyethylene Terephthalate - Super HT Polyester Super High Tenacity and high adhesive
Specific gravity	1,37 (sinking)
Colours	White
UV resistance	Excelent
Abbrasion resistance	Excelent
Acid resistance	Good
Alkali resistance	Good
Cold & frost resistance	Very Good +
Water resistance	Excellent (0.5% absorption)
Heat resistance	Moderate (260°C melting)
Elongation	Moderate (10% at break)
Oil content in fiber	>0,1%



SUITABLE



Fishery



Mooring



Towing

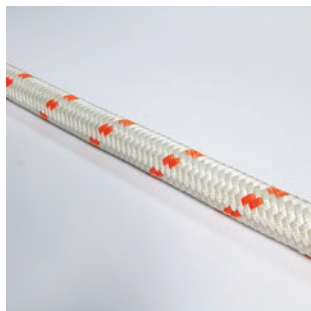


Offshore



KEY BENEFITS

- High strength, both wet and dry
- Increased abrasion resistance
- Easy to handle
- Well balanced: 6 left and 6 right strands
- Low bending ratio
- High melting point (260°C)



Would you want to know more? –  – www.timmropes.com

TERRALINE™ Duodec² Double braided 12-strand Polyester rope

diameter DIA. (mm)	MBL spliced (t)	MBL spliced (kN)	MBL unspliced (t)	MBL unspliced (kN)	diameter DIA. (inch)	MBL spliced (lbs)	MBL unspliced (lbs)
10	4	39	4.4	43	13/32"	8.767	9.667
12	5.6	55	6.3	62	1/2"	12.364	13.938
14	7.7	75	8.5	83	9/16"	16.86	18.659
16	9.8	96	10.9	107	5/8"	21.58	24.054
18	12.3	121	13.7	134	3/4"	27.201	30.124
20	15.1	148	16.7	164	13/16"	33.271	36.869
22	18.2	178	20.1	197	7/8"	40.016	44.287
24	21.4	210	23.8	233	1"	47.142	52.380
26	25	245	27.7	272	1_1/16"	55.033	61.148
28	28.8	282	32	314	1_1/8"	63.531	70.590
30	32.9	322	36.5	358	1_1/4"	72.433	80.481
32	37.2	365	41.3	405	1_5/16"	81.943	91.047
34	41.8	410	46.4	455	1_3/8"	92.059	102.288
36	46.6	457	51.8	508	1_1/2"	102.782	114.203
38	51.7	507	57.5	564	1_9/16"	114.113	126.792
40	57.1	560	63.4	622	1_5/8"	125.848	139.831
44	68.6	672	76.2	747	1_3/4"	151.139	167.932
46	74.6	732	83	814	1_13/16"	164.695	182.994
48	81	795	90	883	1_57/64"	178.655	198.506
50	87.6	859	97.4	955	1_31/32"	193.223	214.692
52	94.5	927	105	1030	2_1/8"	208.397	231.553
56	108.9	1068	121	1187	2_1/4"	240.163	266.848
58	116.6	1143	129.5	1270	2_9/32"	256.956	285.507
60	124.4	1220	138.2	1355	2_1/2"	274.154	304.615
64	140.8	1381	156.4	1534	2_5/8"	310.370	344.856
68	158.2	1551	175.8	1724	2_3/4"	348.813	387.570
72	176.5	1731	196.2	1924	3"	389.278	432.531
76	195.8	1921	217.6	2134	3_1/8"	431.767	479.741
80	212.7	2120	240.1	2355	3_1/4"	476.481	529.424
84	237.4	2328	263.8	2587	3_3/8"	523.421	581.579
88	259.6	2546	288.5	2829	3_15/32"	572.385	635.983
92	282.8	2773	314.2	3081	3_5/8"	623.371	692.635
96	306.8	3009	340.9	3343	4"	676.381	751.534



CERTIFICATE



Would you want to know more? --



-- www.timmropes.com

Warp 12-strand HMPE rope with cover

Acera™ Warp is constructed from 12-strand core of Acera™ yarns with lead in the middle and 32-strand braided Acera™ cover protecting rope from wear and abrasion.

This unique single yarn coating process demonstrates the uncompromising commitment to the quality standards of Acera™.

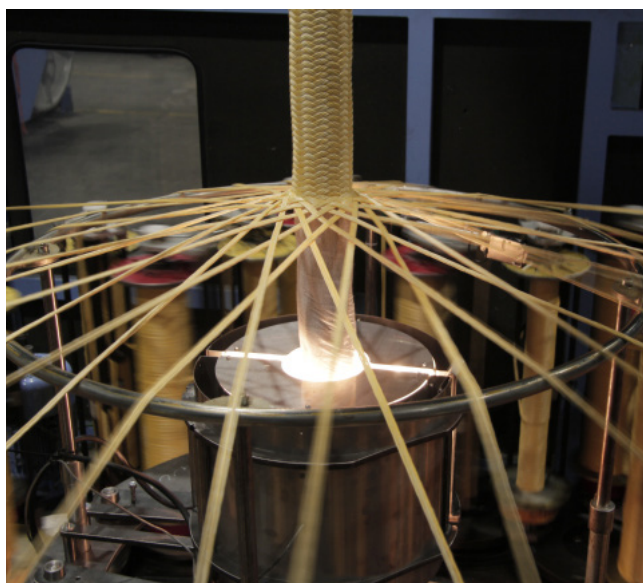
Single yarn coating is proven to significantly enhance internal and external abrasion resistance, and extend service life and strength.

12-strand ropes are regarded as the best rope construction, and has become the most common construction for HMPE ropes. Acera™ Amundsen is the alternative to the cumbersome steel wire ropes. It is stronger and safer, with significantly less snap-back/recoil. The corresponding weight is therefore 7 times slower. When replacing conventional fiber ropes, the reduction in diameter leads to significant savings in weight (60%), space and handling. This reduces the total time required for mooring operations and fuel consumption.



KEY BENEFITS

- Section length
- End - Expert splice with Acera™
- High strength
- Excellent abrasion resistance
- Reduced external damage and particle ingress



SUITABLE



Fishery



Offshore



PRODUCT FEATURES

Construction	12-strand braided core 32-strand braided cover
Fiber	Acera™ HMPE
Specific gravity	0,97-1.6 g/cm3 Customized lead-core
Colours	Platinum
UV resistance	Excellent
Abbrasion resistance	Excellent
Acid resistance	Excellent
Alkali resitance	Excellent
Most chemicals resistance	Excellent
Cold & frost resistance	Excellent
Water resistance	Excellent
Heat resistance	Low (145-150 melting)
Elongation	Low (0,6% under 2,5ton)
Chemical resistance	Excellent

Would you want to know more? –  – www.timmropes.com

diameter DIA. (mm)	MBL spliced (t)	MBL spliced (kN)	MBL unspliced (t)	MBL unspliced (kN)	diameter DIA. (inch)	MBL spliced (lbs)	MBL unspliced (lbs)
16	23.5	230	26	255	5/8"	51.594	57.326
18	29.1	285	32.1	315	3/4"	63.733	70.815
20	34.7	340	38.7	380	13/16"	76.884	85.427
22	41.3	405	45.9	450	7/8"	91.047	101.164
24	47.9	470	53	520	1"	105.210	116.900
26	55.1	540	61.2	600	1_1/16"	121.397	134.885
28	62,7	615	69,9	685	1_1/8"	138.594	153.994



CROSS-SECTION

Protective cover

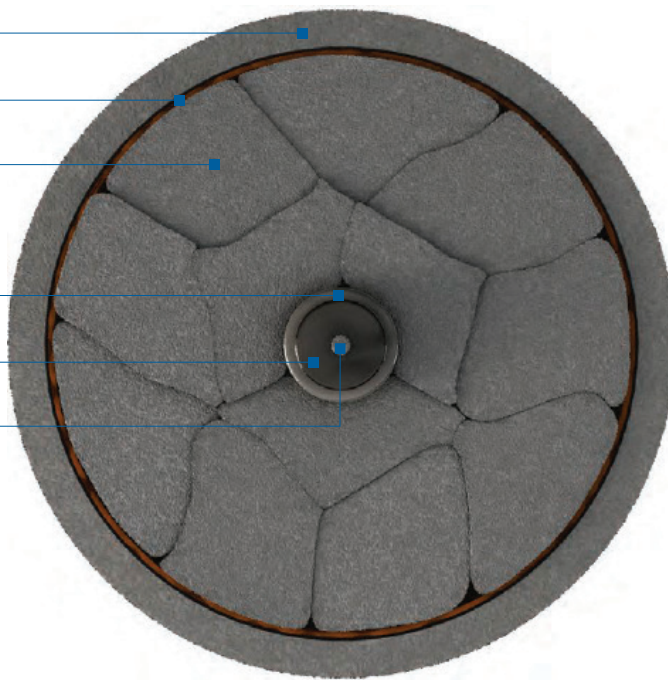
Sand filter

Acera Amundsen

Plastic sheet

Lead wire

Plastic core



CERTIFICATE


by Wilhelmsen
WORKS CERTIFICATE

ACERA™

Soft Shackle

12-strand HMPE rope

Acera Soft Shackle- no haggling connections with low weight and high breakload

Acera Rope Shackle is made from Acera. The new generation high tenacity, ultra strong and ultra light coated HMPE (High Modulus PolyEthylene) fibers. Quick and easy locking. They tighten under tension, but still very easy to release even after heavy load. No tools needed. Available as well in heavy duty double, triple construction.



PRODUCT FEATURES

Construction	Handspliced eye and special Handmade diamond knot
Fiber	Acera HMPE
Specific gravity	0.97 (f floating)
Colours	Platinum, White, Blue, Red
UV resistance	Excelent
Abbrasion resistance	Excelent
Acid resistance	Excelent
Alkali resitance	Excelent
Most chemicals resistance	Excelent
Water resistance	Excellent (0% absorption)
Heat resistance	Low (145-150 melting)



SUITABLE



Lifting



Offshore



Mooring



Towing



KEY BENEFITS

- 20 times lighter than steel shackles
- No rust
- Safe - will never open by accident
- Soft and easy to use
- Easy to release, even under extreme load
- No damages - to the deck, car, etc.
- Will not hangle wear points- i.e. mooring eyes
- Quiet - no met alrubbing sound
- Floating
- Custom made
- Heavy loads upon request

Would you want to know more?



SERVICES

Our highly skilled and experienced staff work in perfect symphony with software and IT solutions to provide the fastest possible services and seamless transactions.

Our clients get turnkey solutions that cover INSTALLATION, INSPECTIONS, AND ON-BOARD MAINTENANCE AND SERVICES.

While onboard, we deliver expertise directly to our clients but, most of all, we provide them with the peace of mind they need to focus on their core business.

TIMM ROPES Service allows customers to invest in:

- Longer service life reduced costs for ropes
- Increased onboard safety
- Stress-free operation, increased expertise



Using work equipment correctly will increase safety as well as improve working environment onboard. Incorrect or damaged accessories can lead to accidents and missed days at work, which are very costly for companies.

Service of Changing from Wire Mooring to HMPE Ropes :

- we offer complete rope checks and consultation on safety and performance
- We will check your ropes and deck equipment, as well as guide rollers, fair leads, etc.

“

Thanks for all your support with this valuable order. Huge thanks also to Peter and Rado who are great ambassadors for your company and for your Country. Rado's assistance was invaluable and Peter's addition was essential both in terms of communicating but also his enthusiasm to get involved and help wherever possible. Great guys who my team took to very well.

”

SPLICING

We offer onboard and onshore splicing of any type of rope.

Some ropes are required to be spliced by an expert. If you are interested in our rope splicing services, we have a team of trained professionals who would find and recommend the best kind of splicing method for your needs (the safest and most effective solution).

We can offer a full Rope Splicing service including high performance ropes.

If you need loops or thimbles spliced into the end or ends of your rope, please call or email us to discuss your requirement.

If you need any help choosing the right material, constructing a rope for a specific application, or deciding which type of splice is desirable.

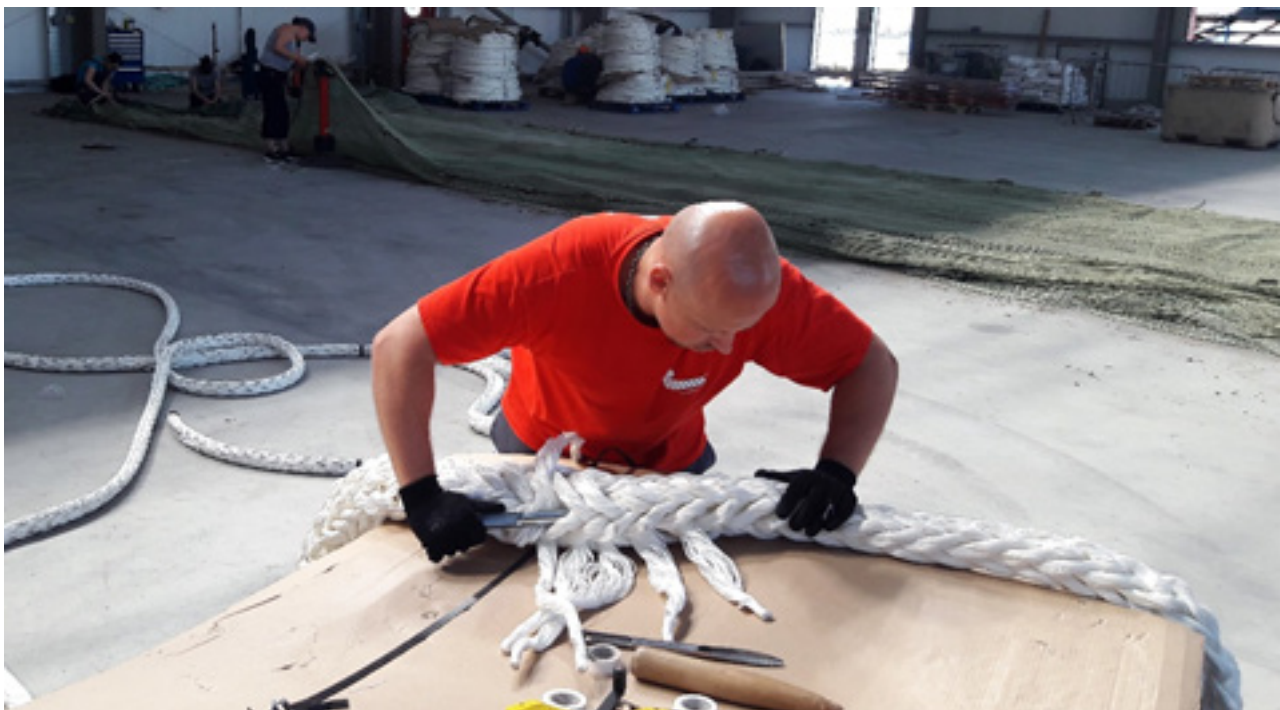
A proper splice will reduce rope strength by 10% or less, while a knot can reduce strength rope by over 50%



“

It was very good service time and service done in a very professional way.
We are fully satisfied.

”



INSTALLATION AND INSPECTION

Our installation supervisors will guide the crew when the vessel changes wire to synthetic rope.

Steel-wire ropes typically leave deck hardware with severe surface damage. Our technicians can show the crew how to prepare the surface to the acceptable level. All deck hardware which will be in contact with the rope should have surface in a good condition, for instance, bollards, winches, and chocks line.

In addition, our technicians will ensure that the ropes and installations are being handled and performed correctly.



TRAINING

TIMM ROPES is pleased to offer a series of services. We provide classes and/or onboard training of officers and crew in use, maintenance, discard criteria, and splicing of ropes.

We perform our services both onboard and onshore. We have a network of representatives which covers the world's major points. A rope is a very important part of ship's operation in port.

The rope quality and the crew's knowledge and experience with mooring, towing, and lifting is vital for on-deck safety and reducing the cost of service.



CERTIFICATION

TIMM ROPES is proud owner of certification
ISO-9001:2015 for our quality management system.

We have implemented our quality management system in order to improve the overall performance, maintain a high-level of quality and strong customer service and to provide a sound basis for sustainable development initiatives. Our decision to work towards ISO 9001 accreditation demonstrates the commitment to providing a high-quality and consistent products and services to our clients and our ongoing investment in technology and development.



MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 205587-2019-A2-C25-RVA Initial certification date: 11 June 2019 Valid: 11 June 2022 – 10 June 2025

This is to certify that the management system of
TIMM SLOVAKIA, s.r.o.
Nozdrkovce 3140/37, 911 04 Trenčín, Slovak Republic
and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Quality Management System standard:
ISO 9001:2015

This certificate is valid for the following scope:
Design and manufacturing of textile synthetic fibres, yarns and ropes.

Place and date:
Prato, 30 June 2022



For the issuing office:
DNV - Business Assurance
Tatárkova 6, 102 00 Praha, Czech Republic

Maria Lichnerová
Management Representative

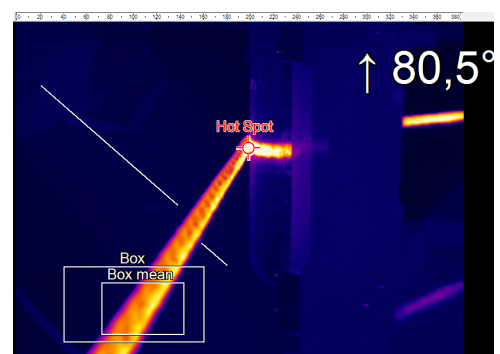
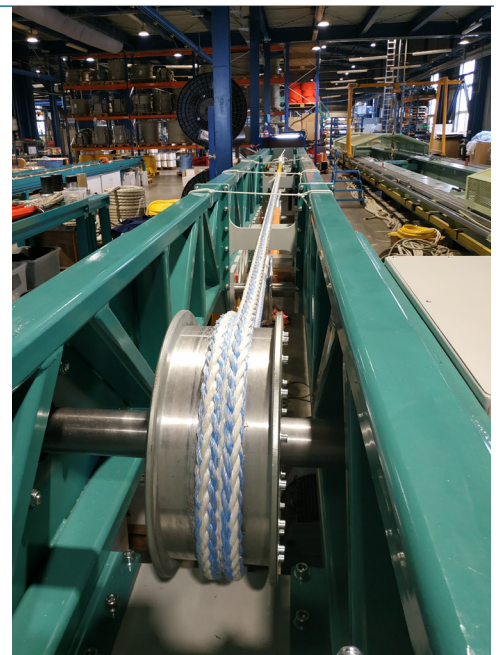
Link of full text of conditions as set out in the Certification Agreement may be found on the DNV website.
ACCREDITED BY: DNV Business Assurance S.r.o., Zvolenský 1, 250 01 Znojmo, Czech Republic. TEL: +420312222222 www.dnv.com/certification

TESTING, R&D

WE TAKE OUR RESPONSIBILITIES SERIOUSLY.

„We are developing one of the Europe's most advanced test labs. TIMM cooperates with leading and industry-recognized certification organizations such as DNV, RINA, Class NK and others. The lab enables TIMM to develop new products according to the customer requirements and specifications, and to meet all customers' documentation needs. We are gradually increasing our testing equipment with special testing machines, adjusted to our strict testing criteria in order to bring out products of uncompromisingly quality. Our key is to deliver to our customers ropes which meet their requirement and stand out from the rest. “

Our mission is that the end user always feels safe using a TIMM rope.



Would you want to know more? --  -- www.timmropes.com

GENERAL TESTING MACHINE KSTH-300 HS

In 2012, the company has taken a strategic decision in terms of testing equipment. Already in the opening of 2013 the specialized equipment was installed. Ever since it became a part of our operations, it has greatly contributed to new product development.

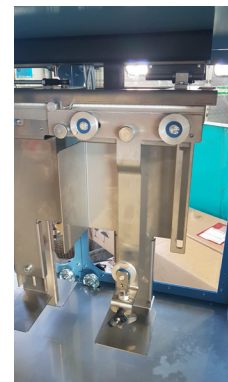
On a yearly basis, we carry out in excess of 350 destruction tests on the ropes we make. The equipment meets the essential safety requirements for testing machinery verified by the tests in accordance with STN EN ISO/IEC 17020 – Compliance Assessment. The equipment is calibrated to 1st category of accuracy, and each year is re-certified by an accredited calibration laboratory.



TECHNICAL PARAMETERS

The maximum length of the test sample is 18 meters, with the maximum achievable rope strength limit up to 300 tons.

We offer our customers test of break strength as well as elongation or proof load test of new or used ropes. All tests are conducted by trained professionals in accordance with the ISO 2307:2019 or CI 1500 standards (as per customer request). Following the successful test, we provide the customers with a thorough test report along with a video recording of the test, to provide them with insight into rope safety.



CONVERSION TABLE

Weight

$$1 \text{ kg} = 1000 \text{ g}$$

$$1 \text{ short ton} = 907,2 \text{ kg (US)}$$

$$1 \text{ long ton} = 1016,05 \text{ kg (GB)}$$

$$1 \text{ oz} = 28,35 \text{ g}$$

$$1 \text{ lb} = 0,4535 \text{ kg} = 16 \text{ oz}$$

Linear Density

$$1 \text{ tex} = \text{g}/1000\text{m}$$

$$1 \text{ den} = \text{g}/9000\text{m} = 0,9 \text{ dtex}$$

$$1 \text{ Nm} = 1000/\text{tex} = 9000/\text{den}$$

Length

$$1 \text{ ft} = 12' = 0,3048\text{m}$$

$$1 \text{ inch} = 1'' = 25,4 \text{ mm}$$

$$1 \text{ mil} = 0.0254 \text{ mm}$$

$$1 \text{ mile} = 1609,3 \text{ m}$$

$$1 \text{ fath} = 1,8288 \text{ m}$$

Force

$$1 \text{ kN} = 1000 \text{ N} = 100 \text{ daN} = 101,97 \text{ kg}$$

$$1 \text{ oz} = 27,8 \text{ cN} = 28,35 \text{ g}$$

$$1 \text{ lb.} = 448,5 \text{ cN} = 0,4536 \text{ kg}$$

Specific Tenacity

$$1 \text{ g/tex} = 0,1 \text{ g/dtex} = 1 \text{ kg/mm}^2$$

$$1 \text{ GPa} = 10^9 \text{ N/m}^2 = 10^3 \text{ N/mm}^2$$

$$1 \text{ cN/Tex} = 0,113 \text{ g/den} = 0,102 \text{ g/dtex}$$

Density

$$1 \text{ g/cm}^3 = 1\text{kg}/\text{dm}^3 = 1000 \text{ kg/m}^3$$

$$1 \text{ lb./cb.inch} = 27,68 \text{ g/cm}^3$$

$$1 \text{ oz./cb.inch} = 1,7300 \text{ g/cm}^3$$

Pressure

$$1 \text{ Pa} = 0,0102 \text{ kg/m}^2 = 0,01 \text{ mbar}$$

$$1 \text{ MPa} = 1000 \text{ kN/m}^2 = 1 \text{ N/mm}^2$$

$$1 \text{ bar} = 1000 \text{ mbar} = 105 \text{ Pa} = 0,1 \text{ MPa}$$

$$1 \text{ Torr} = 1 \text{ mm Hg} = 1,333 \text{ MPa}$$

$$1 \text{ lb./sq.inch} = 0,06895 \text{ bar} = 1 \text{ psi}$$

$$1 \text{ lb./sq.ft.} = 1,48865 \text{ MPa}$$

Work Energy

$$1 \text{ kWh} = 860 \text{ kcal} = 3,6 \cdot 10^6 \text{ J}$$

$$1 \text{ J} = 1 \text{ Nm} = 1 \text{Ws}$$

$$1 \text{ BTU} = 1055 \text{ J}$$

$$1 \text{ mkg} = 9,804 \text{ J}$$

$$1 \text{ kcal} = 4187 \text{ J}$$

Contact TIMM ROPES
to join our family
of satisfied customers
worldwide

■ ADDRESS

TIMM SLOVAKIA, s.r.o.
Nozdrkovce 3140/37
911 04 Trenčin

■ CONTACT

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