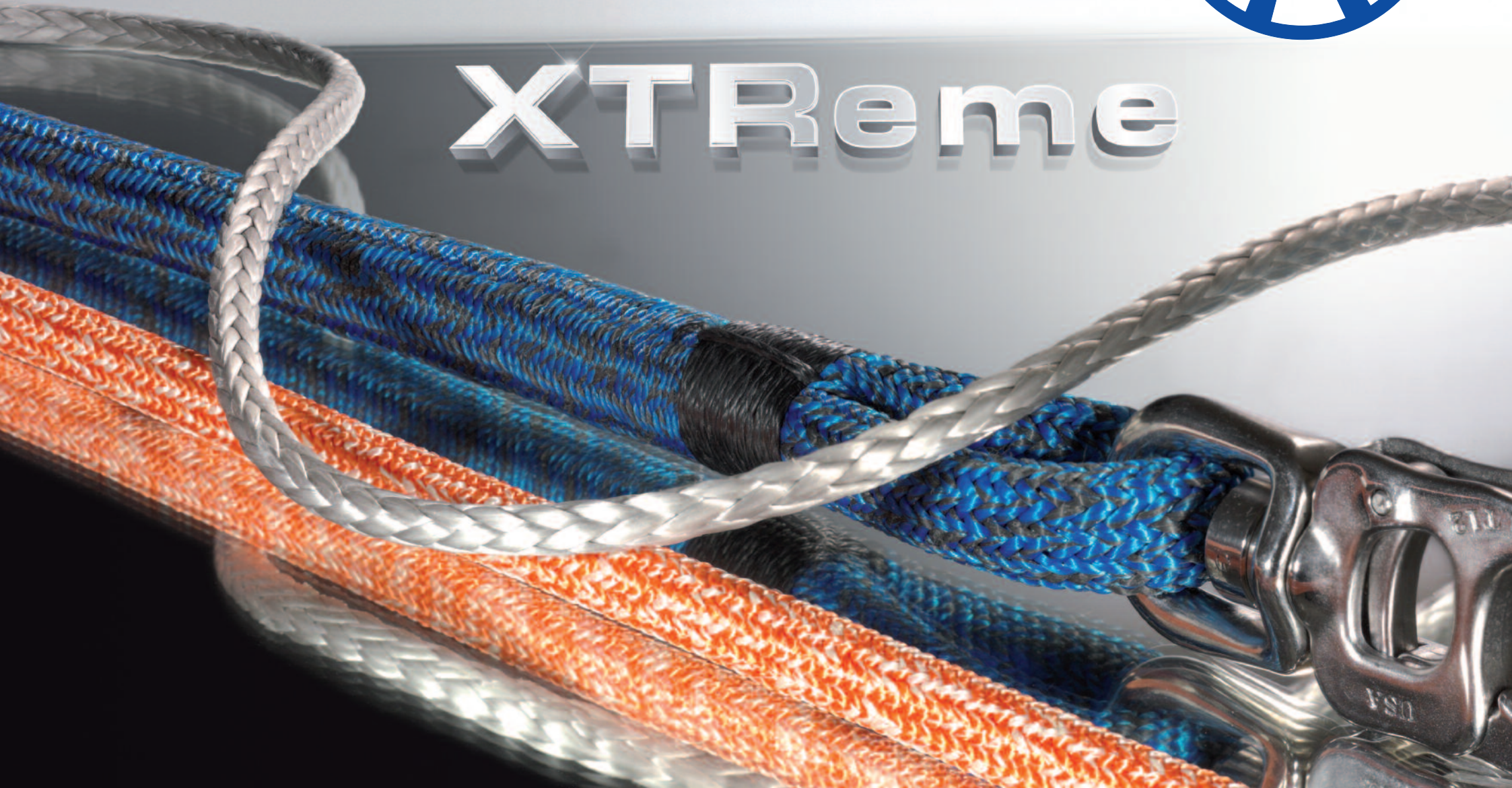


Unlimited
Rope Solutions



XTReme



LIROS - Unlimited Rope Solutions

LIROS is Europe's market leader in premium quality yachting halyards, lines, and cordage. LIROS XTR has been specially formulated for the most extreme racing applications.

DIN EN ISO 9001 and 140001.
Certified by Germanischer Lloyd.

Sven Rosenberger

Karl Friedrich Rosenberger



LIROS Made in Germany - our factory in Berg

Contents

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23	LIROS V-Plus Zero
24-25	LIROS Protect - XTR
26	LIROS XTR-Finish

LIROS LCS

■■■■■■■ LIROS Coating System

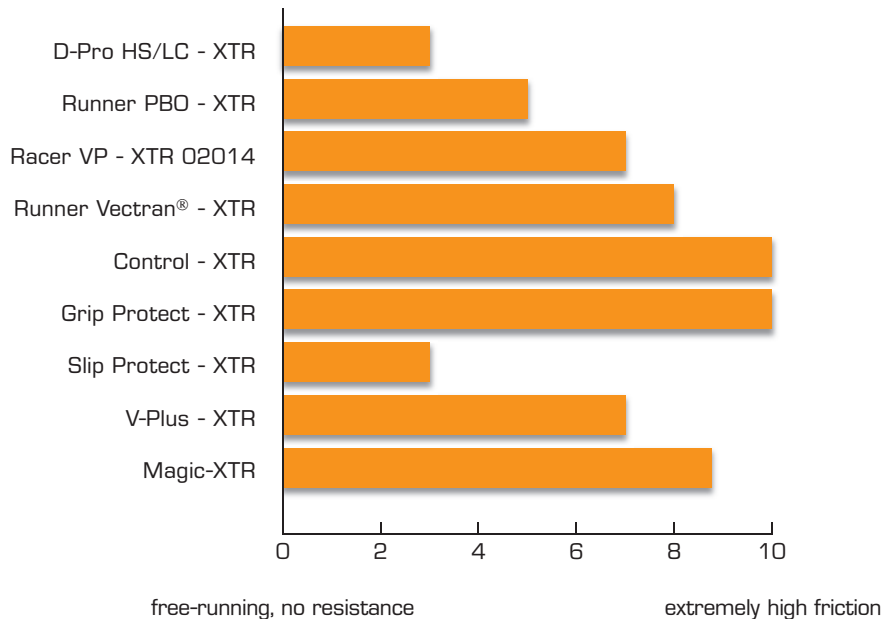
LIROS LCS (LIROS Coating System) is the optimal protection system for running lines against abrasion and UV radiation.

LIROS LCS improves abrasion- and UV-resistance by up to 50%.



New LIROS Technology.

Advanced core-cover engineering, optimized for grip, abrasion resistance, stretch, and breaking loads. New braiding designs deliver unsurpassed core-cover integration for the best in grip, high abrasion resistance and minimal stretch with extreme breaking loads.

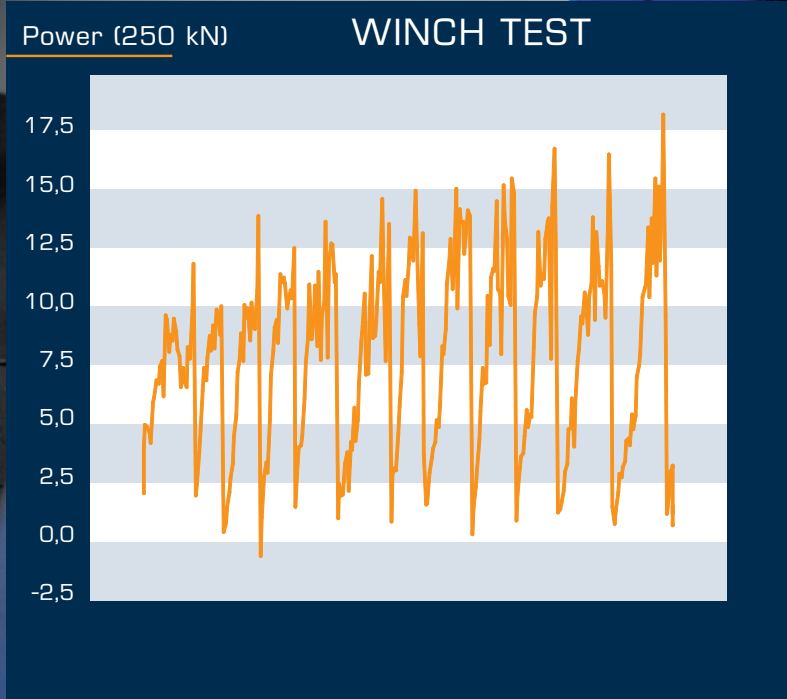
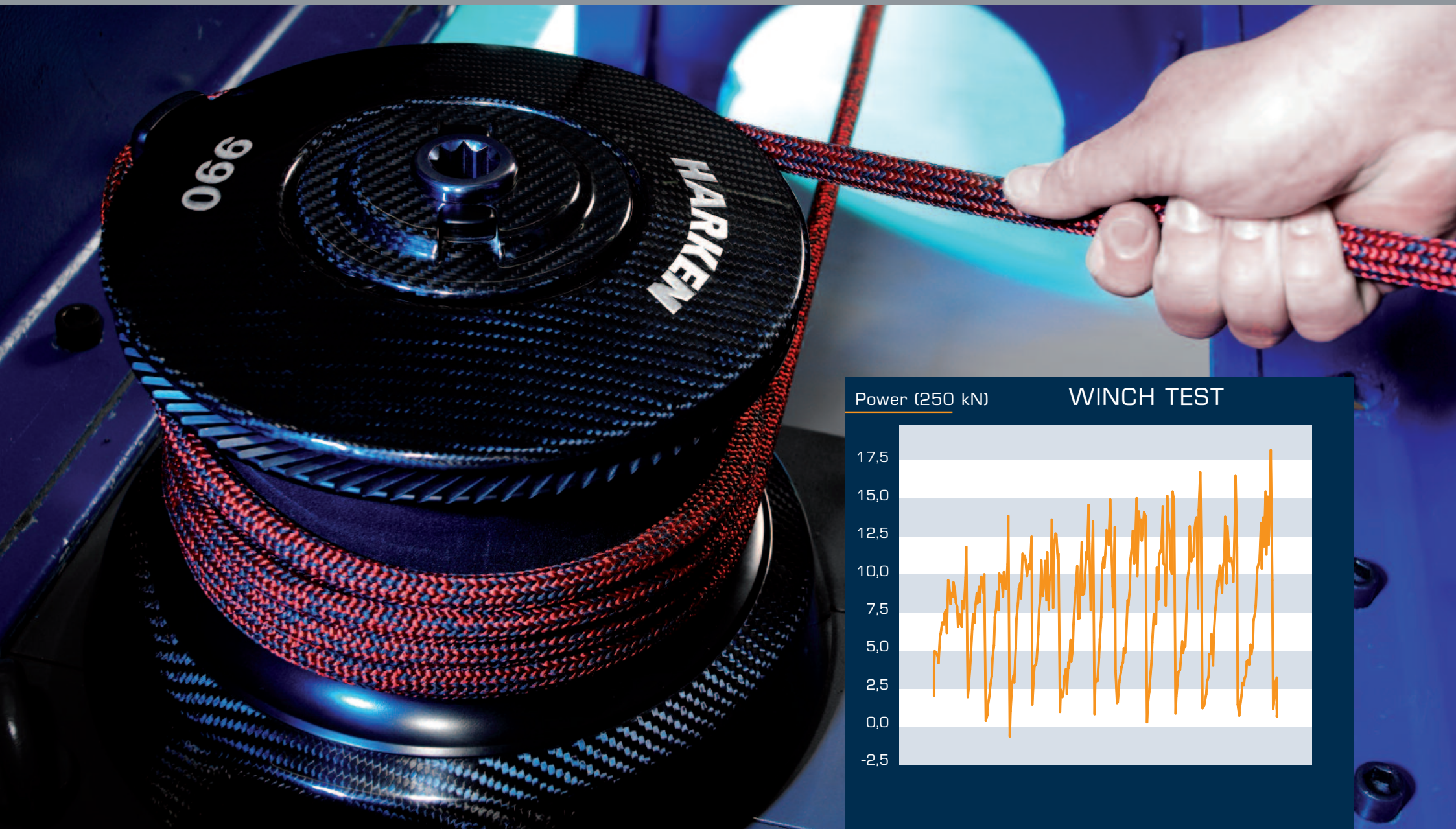


1

Grip Factor

LIROS has developed an exceptional range of new yachting lines, with an emphasis on winch hold and stopper grip specifications. Extensive testing in real world applications through our LIROS Labs, along with direct feedback from the top sailors in the world, generated the kind of results that let professional sailors be confident in their choice of lines. LIROS Grip Factor gives professional sailors a crucial selection criteria and makes it easy for riggers to specify the right grip characteristics for any line. Other important characteristics like breaking load and working stretch guarantee top performance out on the water. Grip Factor is expected to improve over the course of use.

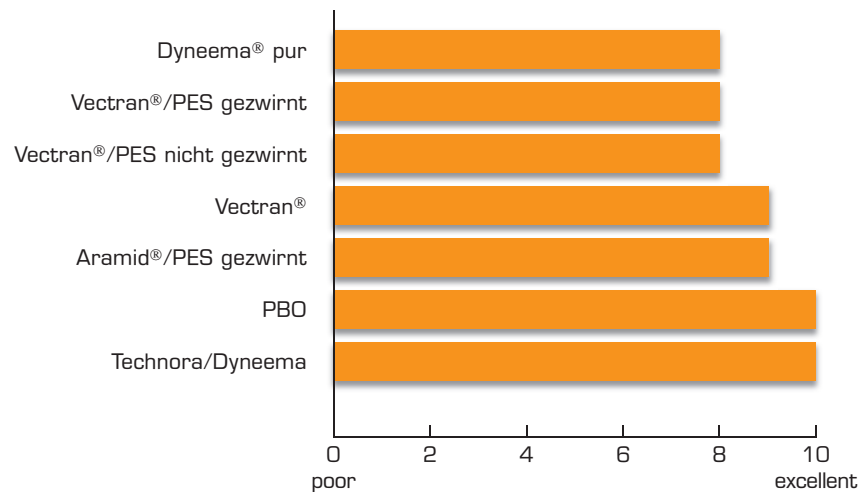




2

Abrasion Resistance

The entire XTR range offers exceptional abrasion resistance. Even under extreme conditions, such as quick surging under heavy loading, LIROS-Runner PBO XTR and LIROS-Control XTR provide exceptional durability. LIROS-Runner PBO XTR prevents cover degradation below 600°C and LIROS-Control XTR below 400°C.



3

Weight

Weight must be considered when selecting a family of lines. LIROS XTReMe offers the best in abrasion resistance and breaking loads with lowest weight through the LIROS Coating System (LCS) and through LIROS Heat Stretch System (HSS) with special twisted/laminated outer cover.

LCS reduces water absorption by up to 33%.

4

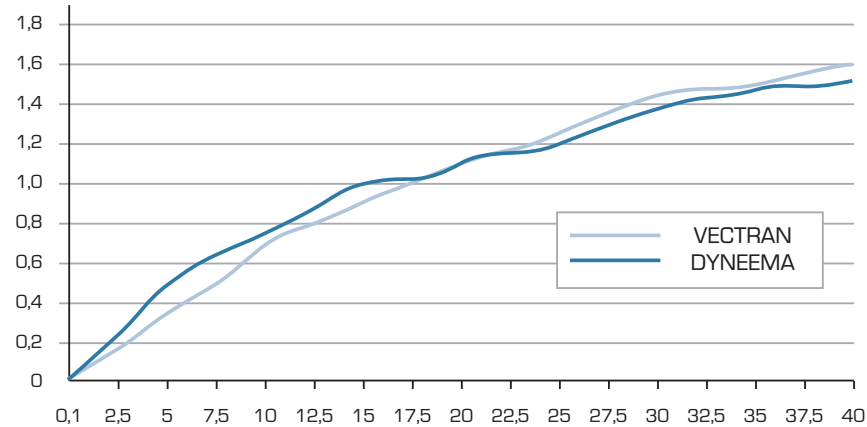
Stretch

Construction and core material determine the fundamental stretch properties of a line.

LIROS XTReMe is optimized for low stretch and elasticity.

LIROS XTReMe transfers the force of the wind directly, without loss of any performance.

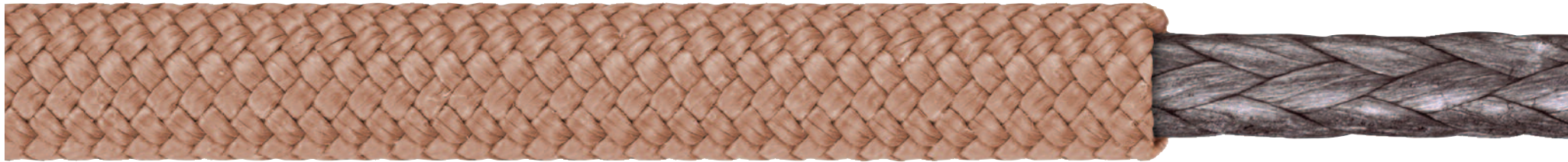
Stretch in %



5

Breaking Load

More and more the choice of lines today depends on grip factor, abrasion resistance, weight, and stretch. Our stated breaking loads refer to splicings done at the LIROS factory. Professionally spliced lines will not lose more than 10% of their linear strength.



Cover: 100% Zylon® - 32-plaited

Core: 100% Dyneema® SK99

LIROS HSS
Heat Stretch System



mm	Weight g/m	Weight Cover	Weight Core	Stretch* %	Breaking kg
8	52	29	23	< 1,0	6250
10	74	42	32	< 1,0	8000
12	87	40	47	< 1,0	11200
14	141	70	71	< 1,0	14100

*Working stretch at 30% of breaking load

LIROS RUNNER PBO - XTR is the line with ultimate cover for extreme abrasion resistance and/or high temperature conditions.

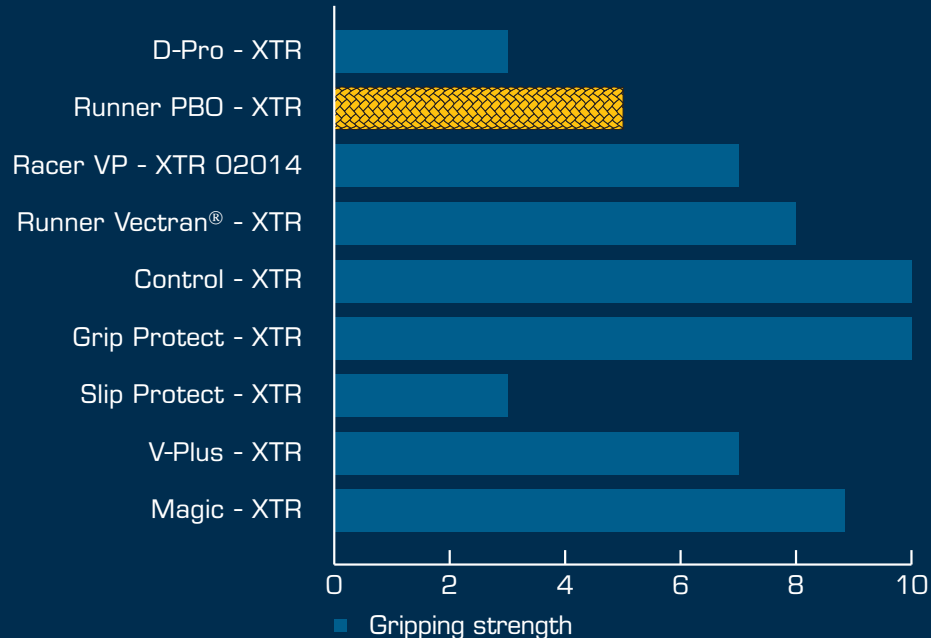
APPLICATIONS

RUNNER
 BACKSTAY
 GENNAKER / HEADSAIL
 SPINNAKER SHEET
 SPINNAKER GUY

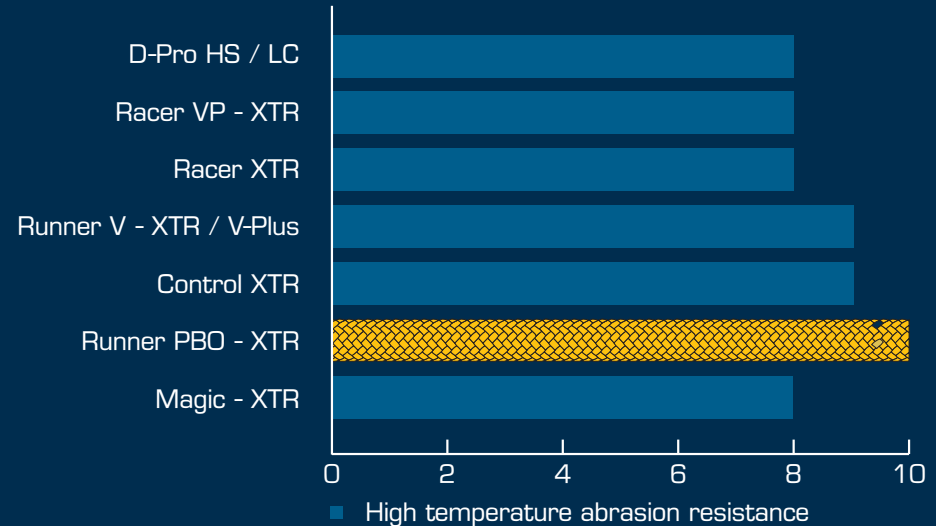
BENEFITS

XTReme abrasion resistance
 XTReme heat resistance (up to 600°C)
 No outer surface softening
 Excellent cover-core strength stability due to LIROS LCS
 XTReme low stretch

GRIP FACTOR



ABRASION RESISTANCE



LIROS Runner Vectran-XTR

ref. 04008



Cover: 100% Vectran® - 32-plaited

Core: 100% Dyneema® SK99

LIROS HSS
Heat Stretch System



LIROS Runner Vectran®-XTR is the line with ultimate cover for minimal abrasion and/or high temperature conditions.

mm	Weight g/m	Weight Cover	Weight Core	Stretch* %	Breaking kg
6	31	16	15	< 1,0	2800
8	53	29	24	< 1,0	6250
10	61	28	33	< 1,0	8000
12	89	42	47	< 1,0	11200
14	144	71	73	< 1,0	14100
16	199	102	97	< 1,0	17500

*Working stretch at 30% of breaking load

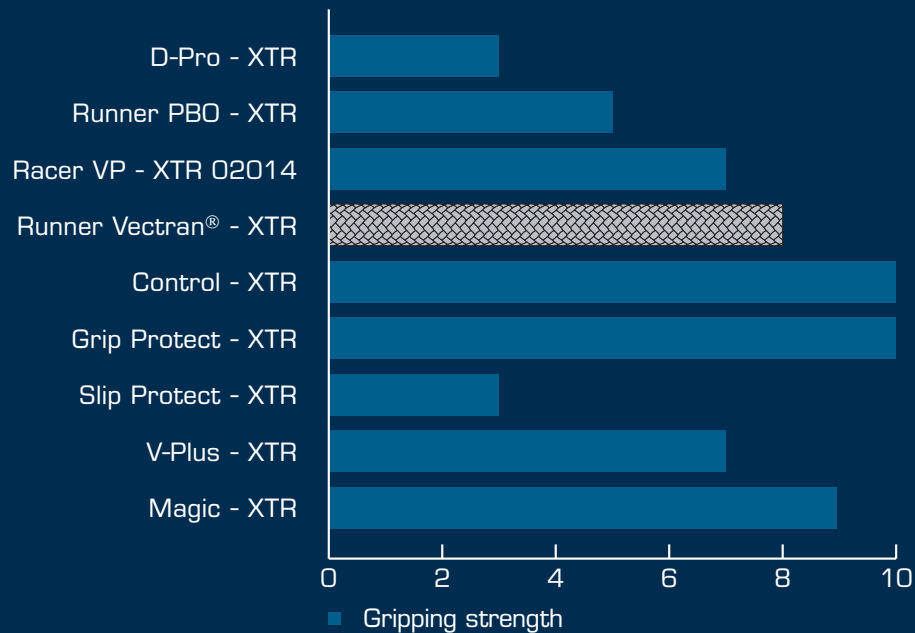
APPLICATIONS

RUNNER
BACKSTAY
GENNAKER / HEADSAIL
SPINNAKER SHEET
SPINNAKER GUY

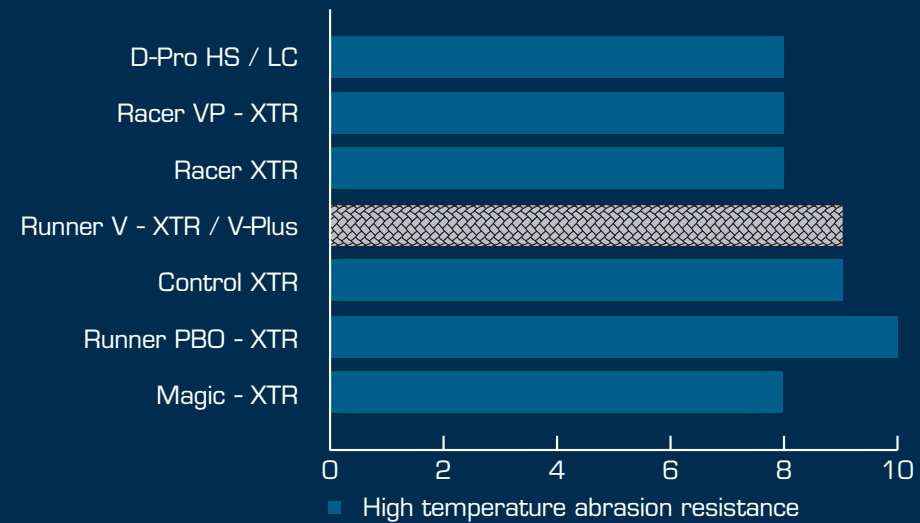
BENEFITS

Excellent abrasion resistance under high temperatures
Reduced outer surface softening
Highest cover-core strength stability
Lowest stretch

GRIP FACTOR



ABRASION RESISTANCE





Cover: 32-plaited tight braid
50% high-twist black Technora
50% high-strength, high-twist polyester

Colours: 239 white-black
178 red-black
090 green-black
019 blue-black

NEW

Core: 100% Dyneema® SK99

mm	Weight g/m	Weight Cover	Weight Core	Stretch* %	Breaking kg
6	24	11	13	1,0	2800
8	44	20	24	1,0	6250
10	60	27	33	1,0	8000
12	95	48	47	1,0	11200
14	131	60	71	1,0	14100
16	167	72	95	1,0	17500
18	232	109	122	1,0	20400

LIROS HSS

||||| Heat Stretch System



LIROS Control-XTR is optimized for grip, combined with best abrasion and temperature resistance.

*Working stretch at 30% of breaking load

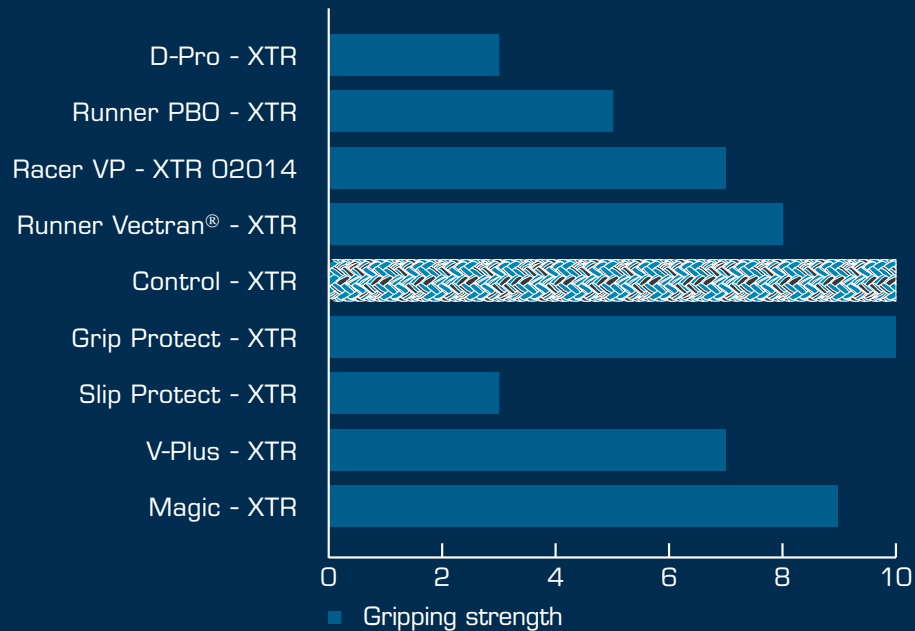
APPLICATIONS

HALYARD
GENNAKER / HEADSAIL
SPINNAKER SHEET
SPINNAKER GUY

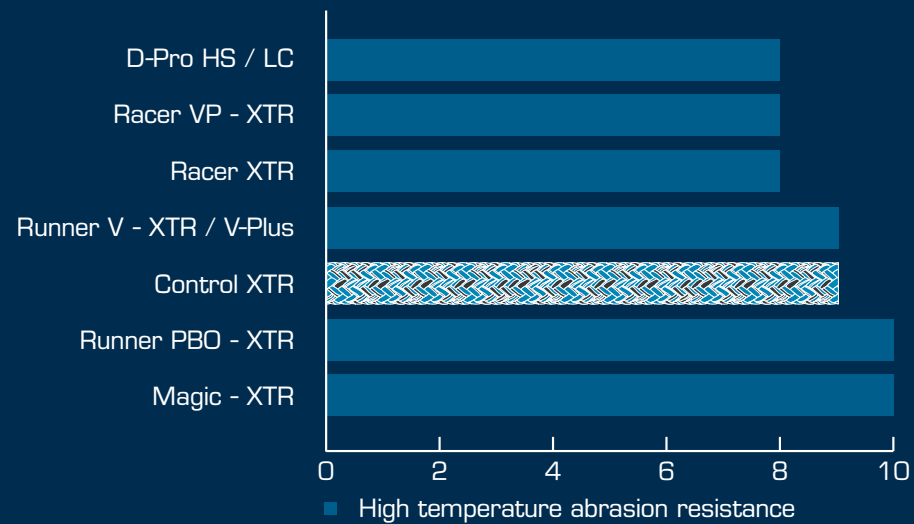
BENEFITS

Highest grip for extreme winch/stopper conditions
Perfect releases due to compact cover construction
Excellent abrasion resistance under high temperature
Reduced outer surface softening
Highest cover-core strength stability
Minimal stretch

GRIP FACTOR



ABRASION RESISTANCE





Cover: Vectran® / Polyester
32-plaited

Core: 100% Dyneema® SK99

NEW

LIROS HSS

||||| Heat Stretch System



LIROS Racer VP-XTR is a high quality, multi-purpose line with optimal release characteristics, as well as high abrasion and temperature resistance.

Designed for highly demanding yachtmen, offers allround performance.

mm	Weight g/m	Weight Cover	Weight Core	Stretch* %	Breaking kg
8	52	28	24	1,0	6250
10	66	31	35	1,0	8000
12	98	49	49	1,0	11200
14	121	61	60	1,0	14100
16	156	78	78	1,0	17500
18	180	90	90	1,0	20400
20	222	111	111	1,0	23500
22	270	135	135	1,0	27600
24	320	160	160	1,0	31500

*Working stretch at 30% of breaking load

APPLICATIONS

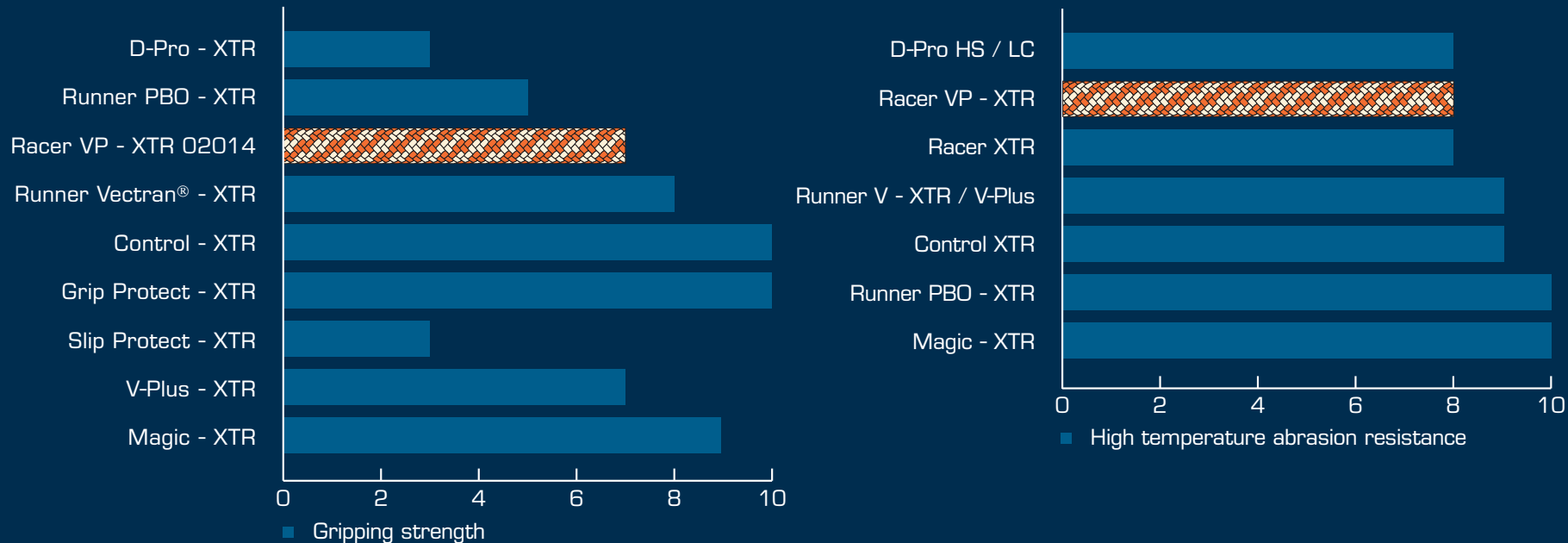
HALYARD
 GENNAKER SHEET
 SPINNAKER SHEET
 SPINNAKER GUY

BENEFITS

Removable cover for XTReme performance and weight saving
 Optimized abrasion resistance under high temperatures, due to cover construction (Vectran®/Polyester)
 Vectran® reduces outer surface softening on winches
 Best cover-core stability
 Very low stretch



GRIP FACTOR





Cover: Technora/Dyneema®
 4-5 mm 16-plaited
 6-8 mm 24-plaited

Core: 100% Dyneema® SK99

Colour: 239 white-black

NEW

LIROS HSS

||||| Heat Stretch System



LIROS Magic-XTR is perfect for use on high performance dinghies and multihulls. Non-slip, practically unbreakable jacket.

mm	Weight g/m	Weight Cover	Weight Core	Stretch* %	Breaking kg
4	10,2	8,4	1,8	1,0	490
5	15,1	10,6	4,5	1,0	1100
6	23,7	16,7	7	1,0	1700
8	38,3	26	12,3	1,0	3100

*Working stretch at 30% of breaking load

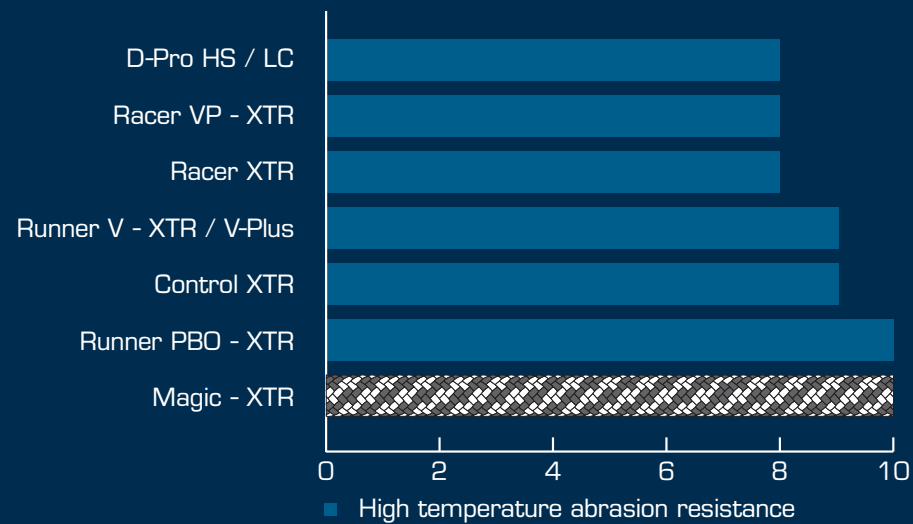
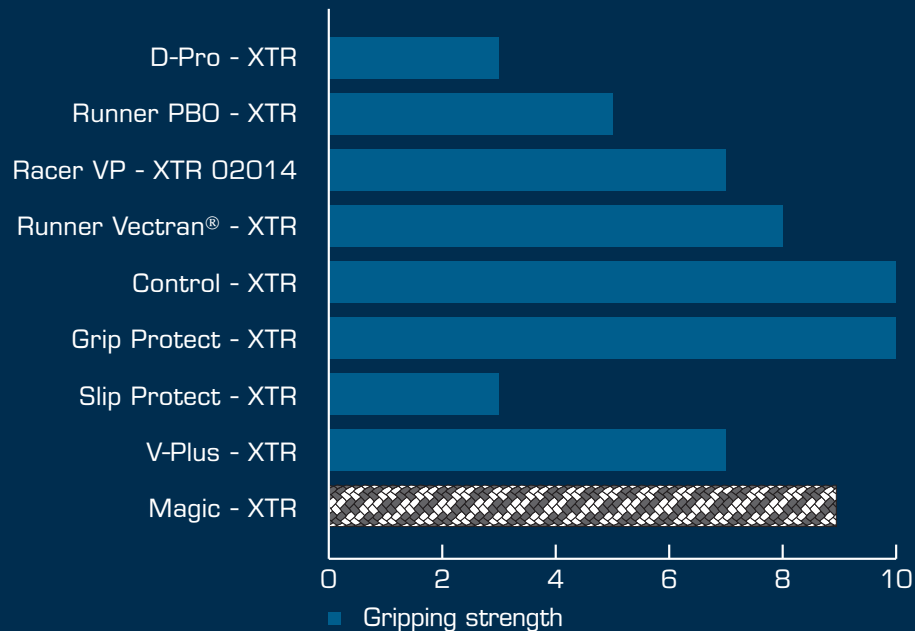
APPLICATIONS

HALYARD
 GENNAKER SHEET
 SPINNAKER SHEET
 SPINNAKER GUY

BENEFITS

Removable cover for XTReme performance
 Highest abrasion resistance, due to cover construction (twisted Technora/Dyneema®)
 Best cover-core stability
 Very low stretch
 perfect handling

GRIP FACTOR





LIROS Dyneema® SK99 12-plaited

LIROS HSS

||||| Heat Stretch System



NEW

12-plaited LIROS D-Pro HS offers the best breakload to weight ratio of all high tenacity fiber ropes. Highly durable XTR Grip Coating, perfect as a replacement for steel and hard shackles. D-Pro HS is the ultimate line for all high load applications with lowest stretch.

mm	Weight g/m	Stretch* %	Breaking kg
3	4,7	1,0	1100
4	6,8	1,0	1500
5	13	1,0	3060
6	23	1,0	5100
8	36	1,0	6200
10	49	1,0	8800
12	94	1,0	14000
14	118	1,0	17000
16	143	1,0	22400

*Working stretch at 30% of breaking load

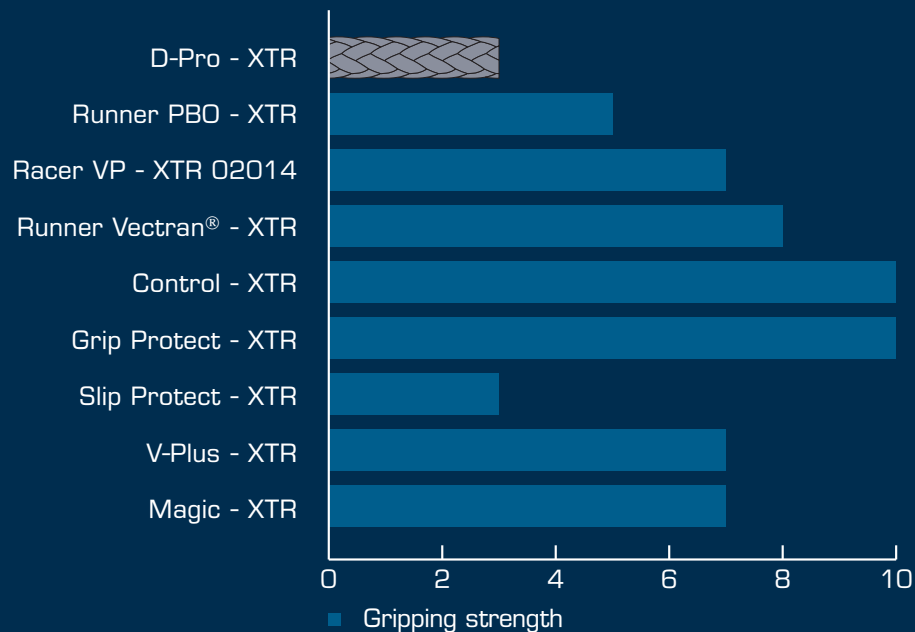
APPLICATIONS

STROP
 BACKSTAY
 SPINNAKER GUY
 MULTI-PURPOSE APPLICATIONS

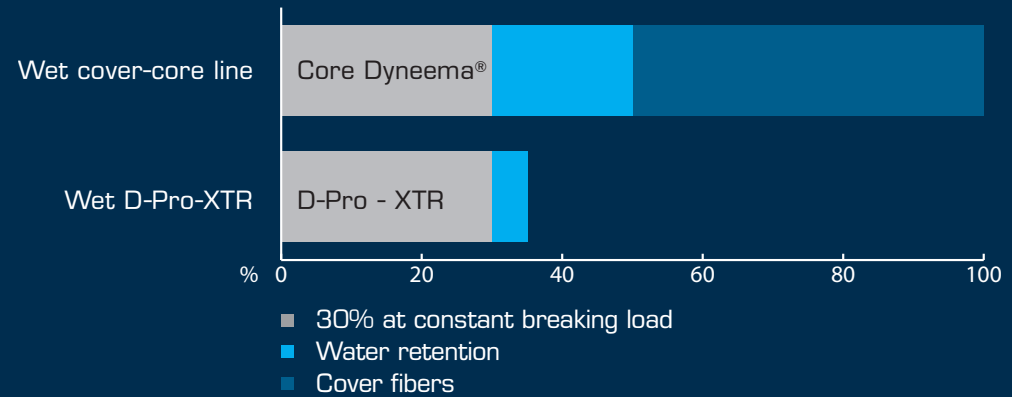
BENEFITS

XTReme low stretch
 Very light weight
 Very easy to splice
 Extremely less water absorption
 Easy to cover with Protect-XTR (pages 24-25)
 Replacing steel and hard shackles
 LIROS D-Pro NC Static for standing loads pages 20

GRIP FACTOR



WATER ABSORPTION





Dyneema® DM20 12-plaited

LIROS HSS

||||| Heat Stretch System



NEW

mm	Weight g/m	Stretch* %	Breaking kg
3	4,7	1,0	900
4	6,8	1,0	1230
5	13	1,0	2450
6	23	1,0	4050
8	36	1,0	5000
10	49	1,0	8500
12	94	1,0	11300

No more creep!

LIROS D-PRO NC Static is created with brand-new Dyneema® DM20. This revolutionary Dyneema® Max-Technology prevents fiber creep and is perfect for standing rigging.

*Working stretch at 30% of breaking load

APPLICATIONS

BACKSTAY

JACKSTAY

RIGGING CABLE

BENEFITS

Best for static loads

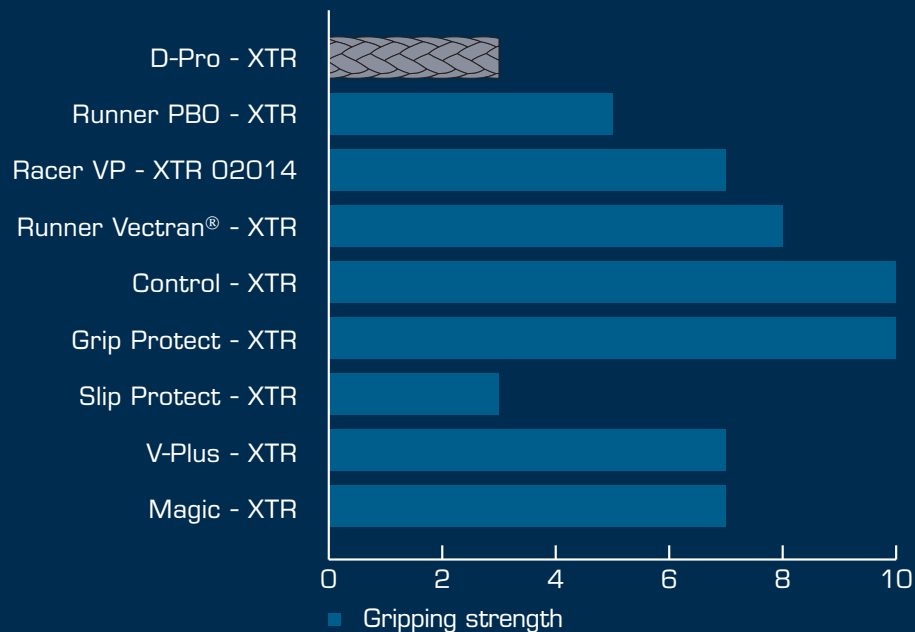
Lowest weight

Easy to maintain

Very easy to splice

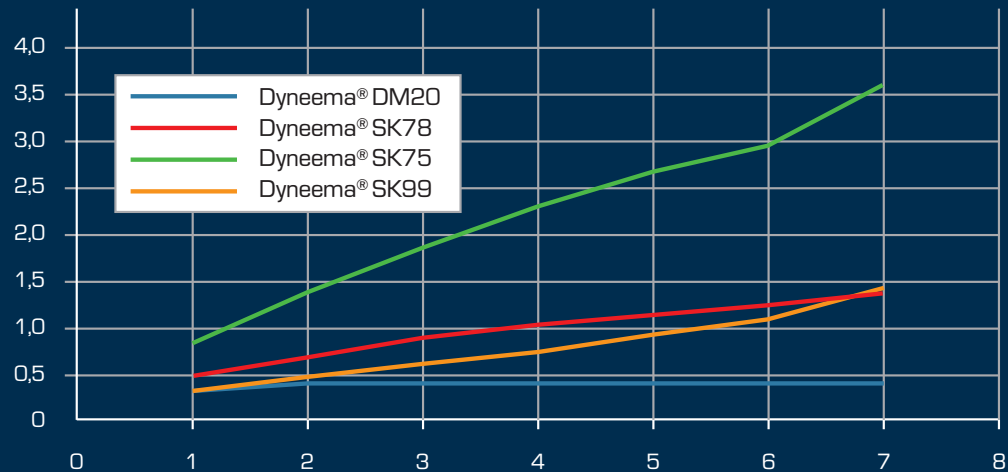
Very safe

GRIP FACTOR



WATER ABSORPTION

Creep test Dyneema®





- STROP
- BACKSTAY
- SPINNAKER GUY
- SAILMAKING

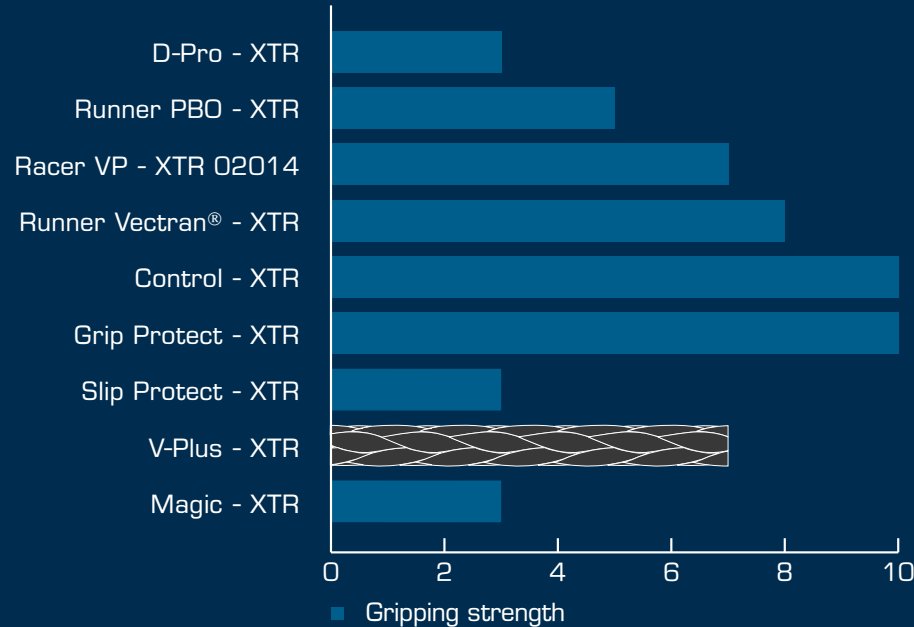
Vectran® with LCS-Coating

V-Plus XTR is 12-plaited, Vectran® with XTR Coating. Perfect as wire replacement or alternative to hard shackles. Ideal for applications that require the lowest stretch and zero creep. Vectran delivers XTReme precision.

mm	Weight g/m	Stretch* %	Breaking kg
2	3	0,8	350
3	7	0,8	1100
4	10	0,8	1400
5	22	0,8	2800
6	32	0,8	4800
8	48	0,8	7000

*Working stretch at 30% of breaking load

GRIP FACTOR

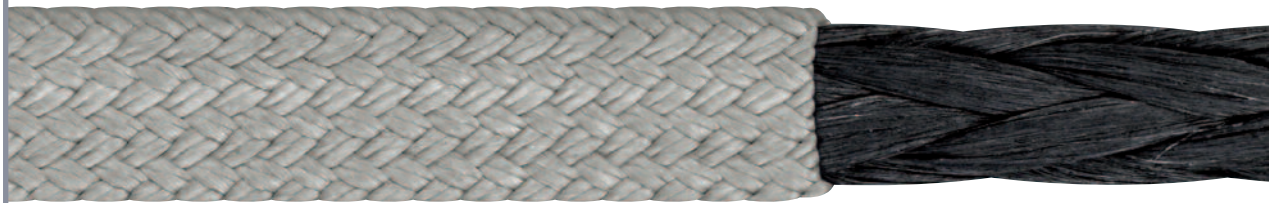


BENEFITS

- No creep
- High tech XTR Coating
- XTReme low stretch
- Easy to splice
- Easy to cover with Protect-XTR (see pages 24-25)

LIROS V-Plus Zero

ref. 00099-0370



Cover: Dyneema® SK78

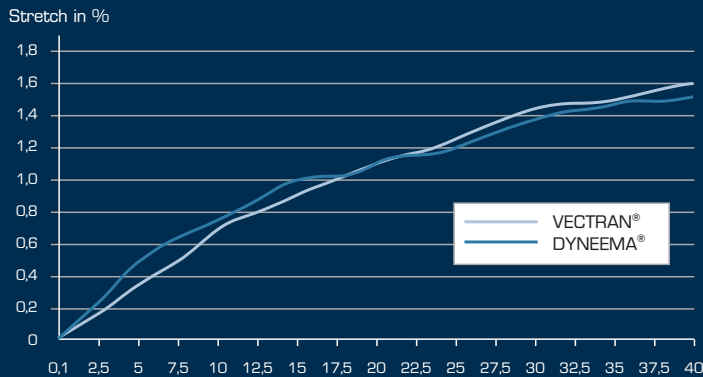
Core: LIROS V-Plus XTR

V-Plus Zero with Dyneema® cover for perfect forestay protection. Professional splicing service in LIROS Pre Splicing Department.



NEW

STRETCH



mm	Weight g/m	Weight Cover	Weight Core	Stretch* %	Breaking kg
10	78	30	48	0,8	7000

*Working stretch at 30% of breaking load

LIROS V-Plus Zero



Dyneema® SK78 with LCS Coating 24-/48-plaited

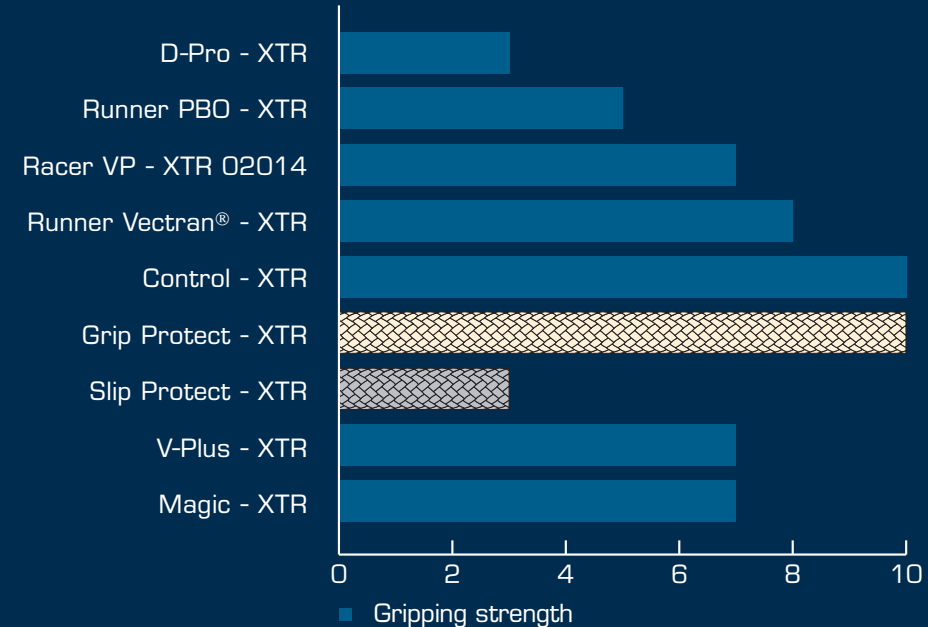


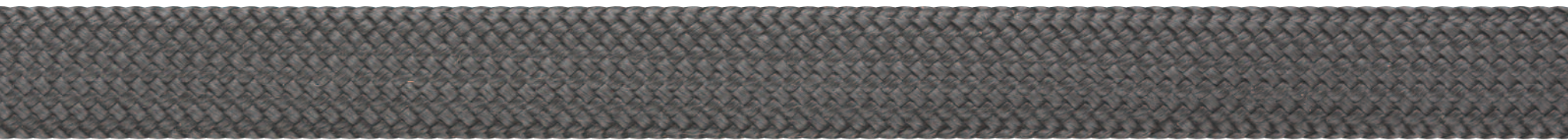
APPLICATIONS

- Abrasion resistant cover for mast top sheave
- Abrasion resistant cover for mast bottom roller
- Multi-purpose protection for D-Pro XTR and V-Plus XTR
- NOT FOR USE ON WINCHES/JAMMERS!!
- LIROS Slip Protect - XTR provides excellent turning block running characteristics
- Ideal cover for nearly every line type of rope
- Additional protection for splices
- LIROS LCS Coating

Cover for line Ø		Weight g/m
5/6	24-plaited	7
8/10	48-plaited	13
12/14	48-plaited	31
16/24	48-plaited	40

GRIP FACTOR

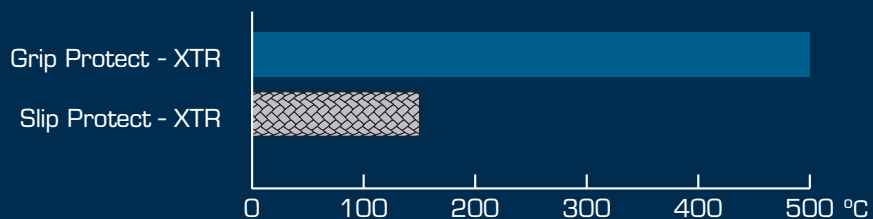




100% Aramid®

NEW

TEMPERATURE RESISTANCE



APPLICATIONS

- Best grip in jammers
- Perfect abrasion resistance
- Specially designed for use on winches and jammers!!
- LIROS Grip Protect XTR provides XTReMe grip
- Very high temperature resistance
- Perfect solution against jammer slippage
- Ideal cover for nearly every type of rope

Cover for rope Ø		Weight g/m
5/6	24-plaited	5
8/10	48-plaited	10
12/14	48-plaited	20
16/24	48-plaited	41

250 ml Bottle

yellow

black

clear



blue

burgundy

APPLICATIONS

Additional protection on all types of rope (Polyester, Dyneema®, Vectran®, Zylon®)

Best protection for the cover: Reduction of fiber/fiber abrasion.

BENEFITS

Easy to use

Long-lasting protection

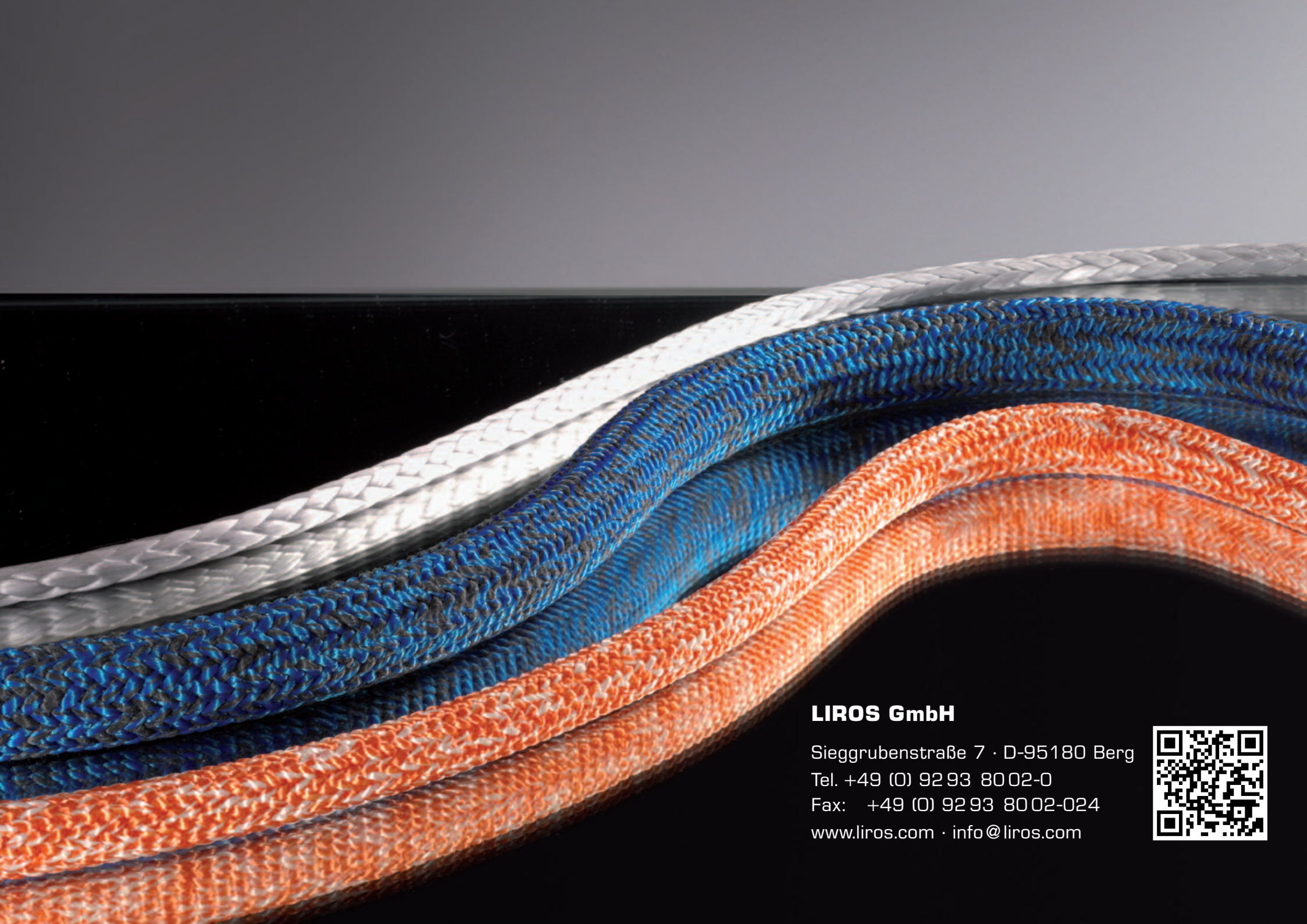
Additional UV protection when using black finish

Water-based (easy cleanup)

Reduces abrasion

TIPP

Finish may be diluted up to 50% with water. Apply the finish to the cover carefully with the included sponge. Begin by applying a small amount to a test area. Dipping or completely immersing the line is not recommended – the line could become too stiff/heavy.



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