Marlow®

PAST
PRESENT
FUTURE

THE DEFINITIVE ROPE GUIDE

Marlow®

PAST PRESENT FUTURE

Every business can be defined by where they've come from, how they conduct themselves and where they plan to be. So it is at Marlow, where these thoughts define everything we do.

We are extremely proud of our heritage – not only as a brand recognised around the world for quality, performance and innovation, but as a business with ties to the local community going back over 200 years.

However, with our history and reputation comes responsibility and we are committed to maintaining the quality and service that our customers have come to expect.

As to the future, we strive for innovation and growth, constantly looking at ways to improve and develop – not only our range of world beating products, but our service and availability to every sailor around the globe.

CONTENTS

COMPANY PROFILE

QUALITY, INNOVATION, TECHNICAL EXCELLENCE

In 1807 Thomas Burfield opened his rope factory in Hailsham, East Sussex and, over 200 years later, Marlow Ropes continue to manufacture ropes on the same site.

In the mid 1950's Burfield and Son's was incorporated into the expanding Hawkins and Tipson Rope Group, founded by George Hawkins and Alfred Tipson in 1881. At this time, the factory in Hailsham was one of the first in the world to be manufacturing synthetic fibre ropes. These ropes were specifically made for the yachting industry under the new "Marlow" brand.

These new nylon and polyester ropes were ideal for the demands of the re-emerging yachting industry, which was recovering after World War II. The success of the "Marlow" brand led to the founding of Marlow Ropes Ltd in 1961, as part of the Hawkins and Tipson Group, with the express purpose of manufacturing synthetic fibre ropes for the yachting market.

Very soon Marlow Ropes became internationally known as leaders in the field and over the course of the following decades, moved from strength to strength, further asserting its dominance in the yachting industry with innovation and marketing.

Today, over 200 years after Thomas Burfield first set up his rope factory, Marlow Ropes continue to manufacture innovative and quality British products in Hailsham, East Sussex. Our reputation for quality and technical innovation continues in the 21st Century and the company continues to forge a path of progress and growth in the markets in which we operate.

At Marlow we recognise that being a market leader in the global leisure marine industry is not just about great products that you can trust – customer service is key.

"Since it's the customer that pays our salary, our responsibility is to make the product they want, when they want it, and deliver quality that satisfies them", this is a quote from a retired Toyota factory worker and it is the maxim by which everybody at Marlow Ropes carries out their working day.

From stock levels, which gives us enviable On Time In Full delivery statistics for our standard range of products, to capacity planning that allows us to turn around complex made to order Grand Prix Series ropes in a matter of days or even hours. When this commitment to delivery is married with our stringent quality control systems and the diligent dedication of our employees, it means that we are confident that you get the product you want, when you want it, with quality that satisfies you.

We are proud to fly the flag for British manufacturing. Our factory in Hailsham is still on the same site that ropes were first made in the town in 1807, and we remain a key local employer with some of our staff being 3rd or 4th generation ropemakers. However, we always have an eye to the future and over the past few years we have expanded our factory and grown our work force to meet increasing demand.

Everything is driven by our passion and commitment. With Marlow you get a global guarantee of quality, service, commitment and a brand you can trust.

SECTORS

LEISURE MARINE
DEFENCE & SPECIAL FORCES
VEHICLE RECOVERY
ARBORICULTURE

ROPE ACCESS
FIRE & RESCUE
CABLING & TELECOMS
FILM & EVENT RIGGING

MARINE & OFFSHORE
GENERAL INDUSTRIAL
UTILITY

KEY

- HIGH STRENGTH
- LIGHT WEIGHT
- LOW STRETCH
- HIGH ABRASION RESISTANCE
- LOW WATER ABSORPTION
- HIGH FLEX/SOFT HANDLING

IMAGE CREDITS:

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GRAND PRIX *SERIES*

Ran Racing uses Marlow ropes exclusively on both IRC 72 & TP52. In these fleets we demand both performance and reliability. Marlow ropes deliver.
BREDAN DARRER, BOAT CAPTAIN FOR RAN RACING IRC 72

Marlow's Grand Prix Series has revolutionised the way high performance running rigging is specified and ordered. Imitated by many, but matched by none, the Grand Prix Series was developed and is continuously improved through our long experience with high performance race teams and feedback from our global network of specialist Grand Prix Riggers.

The Grand Prix Series uses the highest performance materials such as Dyneema® SK99, Zylon®, Technora®, Kevlar® Teflon® and new for 2014 Zyex®. These materials offer attributes to covers and cores such as higher strength, improved abrasion resistance, better thermal properties, higher (or lower) friction and improved winch handling properties.

Finally, a wide variety of customisations including core inserts, tapered ropes and hoist markers are available along with rigging extras such as chafe cover and ArmourCoat.

The reason Marlow's Grand Prix Series ropes work so well and are so respected is that we listen to the feedback and needs of our Grand Prix Riggers and their customers – the race boat captains and crews. When combined with our attention to detail and passion for excellence, Marlow's Grand Prix Series ropes deliver reliable, race winning performance.

GRAND PRIX *PROJECTS*

Some of the top race results from just the last 12 months of boats supplied with Marlow Grand Prix Series through our Grand Prix Rigging Partners.

MAXI	RESULTS
WILD OATS XI	
Sydney Hobart 2012	1st
AEGIR	
Maxi World Championships 2013	1st
ICAP LEOPARD	
Cowes Dinard St Malo 2013	1st
Round the Island Record Holder June 13	1st
PYEWACKET	
Transpac 2013	1st
MORNING GLORY	
Maxi World Championships 2013	2nd

WALLY	RESULTS
HAMILTON	
Cowes Superyacht Cup	1st
MAGIC CARPET 3	
Maxi Yacht Rolex Cup 2013	2nd
OPEN SEASON	
Maxi Yacht Rolex Cup 2013	3rd

MINI MAXI	RESULTS
RAN 72	
Maxi World Championships 2013	1st
Cowes Week 2013	1st
ALEGRE	
Copa Del Rey 2013	1st
Maxi World Championships 2013	2nd
SHOCKWAVE	
Key West Race Week 2013	1st
JETHOU	
Copa Del Rey 2013	2nd
BELLE MENTE	
Caribbean 600 2013	2nd
Key West Race Week 2013	2nd
Cowes Week 2013	2nd

J CLASS	RESULTS
HANUMAN	
St Barts Bucket 2013	1st
VELSHEDA	
Maxi Yacht Rolex Cup 2013	1st
LIONHEART	
St Barts Bucket 2013	2nd

OPEN 60	RESULTS
HUGO BOSS	
Vendee Globe 2012-13	3rd
Fastnet 2013	3rd

TP52	RESULTS
AZZURA	
TP52 Super Series 2013	1st
Key West Race Week 2013	1st
QUANTUM RACING	
Copa Del Rey 2013	1st
PACE	
Fastnet 2013	1st
Round The Island 2013	2nd
RAN	
TP52 Super Series 2013	2nd
Copa Del Rey 2013	2nd

RC44	RESULTS
TEAM AQUA	
RC44 Fleet Racing Championships 2013	1st

HIGH PERFORMANCE	RESULTS
DECISION	
Key West Race Week 2013	1st
SPOOKIE	
Charleston Race Week 2013	1st

South American Rigging · Vela mania · Gorilla · Florida Riggers & Hydraulics · Marine Results · rigging · Easom · Trimmers on Cabos The Sailing Team · Dark Horse Yachting · Spencer Rigging · Rig Pro

CORE *TECHNICAL REFERENCE*

Marlow's Grand Prix Series offers a range of core options using Dyneema, Vectran and Zylon (PBO). Each material has it's own particular strengths and weaknesses.

Dyneema offers by far the best strength to weight ratio of any material used in rope manufacture and is the material of choice for high performance cores. At Marlow we offer a range of Dyneema cores to suit strength and handling preferences as well as budget.

Dyneema is an Ultra High Molecular Weight Polyethylene (UHMWPE) and is available in a number of different grades. All grades of Dyneema have excellent fatigue resistance (cyclic bending), UV resistance and abrasion resistance, but have poor heat resistance due to a relatively low melting point.

- SK78 is now the standard material offering very high strength but significantly improved creep characteristics over it's predecessor SK75 or equivalents.
- SK99 is the very latest Dyneema material. It offers exceptional strength (some 20% higher than SK78) and is unmatched in terms of strength to weight ratio.
- DM20 has slightly lower tenacity than SK78, but has one major advantage in that it exhibits virtually zero creep, which can often have a negative affect on a rope's performance and strength, at high loads for an extended period.

Vectran (LCP) has the best creep performance of any synthetic fibre and can offer improved resistance to heat compared to the UHMPE family.
Zylon (PBO) offers unrivaled strength/diameter performance coupled with exceptional resistance to heat and ultra low elongation. PBO is very susceptible to UV degredation.

STRENGTH

The graphs below illustrate the comparative strengths of different core materials, based upon a **9mm core used in a 12mm rope.**

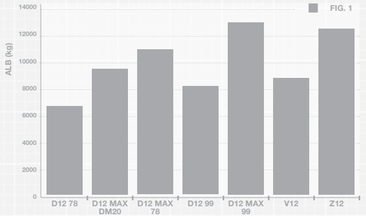
Fig. 1 shows the relative strengths of 9mm ropes made with different materials. However, whilst displaying break strengths comparable or better than Dyneema, the additional weight of Vectran and Zylon (PBO) ropes (Fig.2) cannot compare to the strength to weight ratio of Dyneema (Fig.3), illustrating why Dyneema is preferred by the majority of racers.

PRE-STRETCHING AND MARLOW MAX TECHNOLOGY

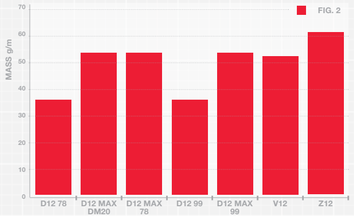
Every Marlow Dyneema core is pre-stretched to reduce "bedding in" elongation, limit the amount of elastic elongation and improve rope strength. We have been pre-stretching Dyneema cores for over 25 years and that experience means we know exactly how to improve the rope's performance without compromising flexibility or damaging the fibre.

Marlow's MAX Technology uses a precisely controlled process to take Dyneema to the limits of heat and load during Pre-Stretching. Introduced to offer the ultimate in strength realization from the fibre and to minimize elastic and "bedding-in" elongation, MAX ropes are stiffer than standard pre-stretched cores.

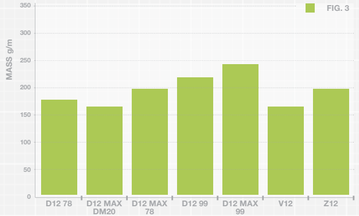
CORE STRENGTH COMPARISON
9MM (CORE FOR 12MM ROPE CORE STRENGTHS



CORE WEIGHTS (mm)



TENACITY (kg/g)



MATERIAL ELONGATION COMPARISON GRAPHS

These graphs show the relative elongation of Dyneema SK78 and SK99 to Vectran and Zylon (PBO).

When elongation is measured as a % of break load (fig. 4), it is shown that whilst Zylon offers the lowest elongation followed by Dyneema in D12 Max and then D12, there is no differential between SK78 and SK99. However, when elongation is measured at a given load (for example 4,000kg), which is more relevant to specifying rope for on board applications (fig.5), it can be seen that the advantages of SK99 over SK78 in terms of elongation are clear. This is because the rope is working at a lower percentage of the its break load.

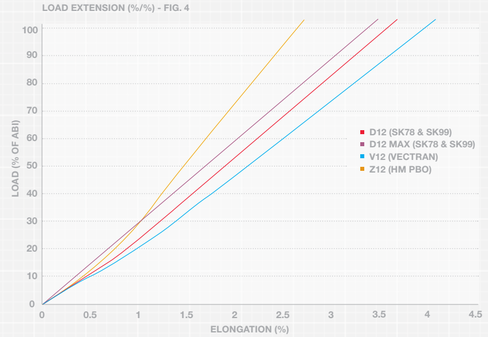
However, as Dyneema exhibits creep, it is important to understand how this affects Dyneema's elongation characteristics.

The extension over time graph (Fig. 6) shows how Dyneema ropes behave over a period of time. Whilst the time illustrated is relatively short, the concept is the same for longer periods.

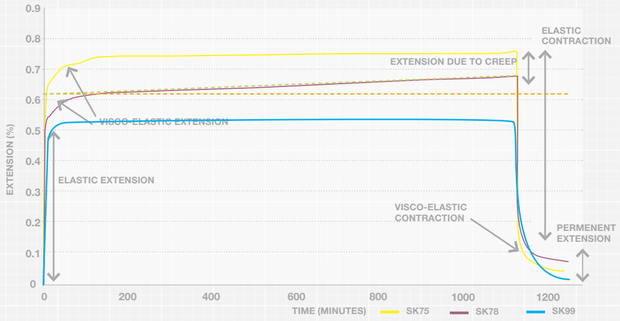
- Initial loading will result in elastic extension. This is immediate upon loading and is immediately recoverable upon release of the load (elastic contraction)
- After the elastic extension of the initial loading, the rope will experience what is known as viscoelastic extension. This is further extension over time and is fairly limited. Unlike elastic stretch that is immediately recoverable, viscoelastic stretch will recover slowly over time once the load is released.
- Finally there is creep, which is permanent, non-recoverable and time dependent. Creep occurs at the yarn molecular level when the rope is under constant load.
- Once the load is released and elastic and viscoelastic extension recovered, the rope will ultimately have experienced an element of permanent extension. This is a factor of both creep and "bedding in" which is when individual fibre components in the rope and / or splice settle into their preferred position when under load.

Vectran and Zylon (PBO) exhibit virtually zero creep and Zylon also has lower elastic elongation than Dyneema.

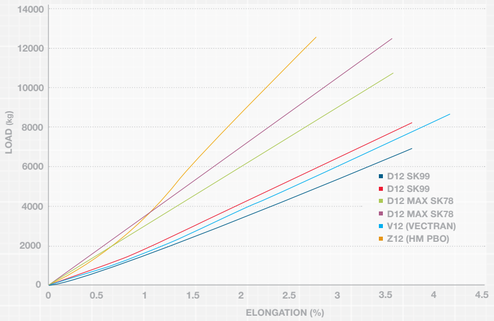
LOAD EXTENSION (%/%) - FIG. 4



EXTENSION OVER TIME GRAPH - FIG. 6



LOAD EXTENSION OF 9mm CORES (%/kg) - FIG. 5



CORES *(Grand Prix Cores specified uncovered or covered with one an MGP Cover detailed on page 13)*

D12 MAX

Construction: 12 strand
Material: Dyneema® Available in SK99, SK90 and SK78
Extras: Marlow's Super Pre-Stretch process, ArmourCoat
Features: Ultimate high strength, light weight, low elongation ropes

DIAMETER (mm)	2.5	3	4	5	6	7	8	9	10	11	12	13	15	17
SK99 BREAK LOAD (kg)	1196	1793	2948	3808	5443	8937	11171	12522	14609	17526	20871	24529	30661	38106
SK90 BREAK LOAD (kg)		1741	3032	3696	5283	8674		12468	14546	17451	20781	24424	30529	37942
SK78 BREAK LOAD (kg)	1005	1507	2477	3200	4574	7510	9387	10795	12594	15109	17992	21146	26432	32850
WEIGHT KG/100M	0.45	0.68	1.11	1.56	2.23	3.56	4.45	5.40	6.30	7.55	9.00	10.7	13.4	18.4

For high-load, diameter or safety critical applications, D12 Max is the only choice, either covered or uncovered. Stiffer than standard D12, D12 Max is taken to the limit of its physical properties during the manufacture process resulting in a rope unrivalled in strength and low elongation. Max 99 offers approximately 20% higher break load over Max 78.

D12

Construction: 12 strand
Material: Dyneema® Available in SK99, SK90 and SK78
Extras: Pre-Stretched, ArmourCoat
Features: Light weight, low stretch & high strength. D12 78 & 99 demonstrate lower creep than other types of UHMWPE fibres.

DIAMETER (mm)	2.5	3	3.5	4	5	6	7	8	9	10	11	13	15	16	18	20
SK99 BREAK LOAD (kg)	677	1184	1706	2447	2804	4150	6378	7533	8259	11036	13794	18387	21365	24475	29174	38883
SK90 BREAK LOAD (kg)		1356		2375	2721	4027	6191		8016	10711	13389	17231	21273	23354	27112	38716
SK78 BREAK LOAD (kg)	569	995	1434	2056	2356	3487	5360	6330	6940	9274	11592	15851	18418	21099	25150	33520
WEIGHT kg/100m	0.37	0.53	0.74	0.98	1.28	1.77	2.80	3.30	3.76	4.83	5.82	8.00	9.80	11.8	14.3	18.0

The workhorse of any racing yacht, uncovered D12 can be used for strops, lashing, and purchase systems, backstays and some halyards. With a cover, D12 is ideal for sheets halyards, runners, control lines etc. D12 99 offers approximately 20% higher break load over D12 78.

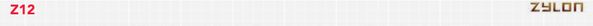
M-RIG MAX

Construction: 12 strand
Material: Dyneema® DM20
Extras: Marlow's Super Pre-Stretch process, ArmourCoat
Features: Ultimate Low Creep, light weight rope.

DIAMETER (mm)	2.5	3	4	5	6	7	8	9	10	11	12	13	15	17
BREAK LOAD (kg)	902	1353	2224	2874	4107	6744	8430	9694	11309	13568	16157	18989	23736	29499
WEIGHT kg/100m	0.45	0.68	1.11	1.56	2.23	3.56	4.45	5.40	6.30	7.55	9.00	10.7	13.4	18.4

M Rig Max's top benefit is minimal creep ideal for standing rigging and steering lines. Add an MGP cover or light weight chafe cover for high wear applications such as life lines. *See page 31 for more details on M-Rig Max.*

Z12

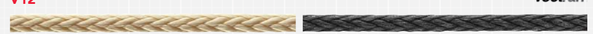


Construction: 12 strand
Material: Zylon® (PBO)
Extras: ArmourCoat
Features: Very high strength, very low stretch and zero creep

DIAMETER (mm)	3	3.5	4	5	6	7	9	10	11	13	15	16	18
Z12 BREAK LOAD (kg)	1469	2350	2938	3819	5288	7932	12566	15417	18507	24904	31416	37699	44382
WEIGHT KG/100m	0.72	1.15	1.44	1.87	2.59	3.89	6.16	7.56	9.07	12.2	15.4	18.5	21.8

Where very high strengths are essential, UV exposure can be managed and bending cycles minimised – Stays, trip lines etc.

V12



Construction: 12 strand
Material: Vectran®
Extras: ArmourCoat
Features: High strength, very low stretch and zero creep

DIAMETER (mm)	2.5	3	4	5	6	7	9
BREAK LOAD (kg)	627	993	1678	2405	3350	5750	8680
WEIGHT (KG/100m)	0.45	0.67	1.34	1.79	2.24	3.36	5.38
DIAMETER (mm)	10	11	13	15	16	18	
BREAK LOAD (kg)	10980	11950	14700	18420	22700	25100	
WEIGHT (kg/100m)	6.72	8.96	10.6	14.1	17.0	18.8	

Where zero creep is essential and UV exposure can be managed in non weight critical applications - and halyards, steering systems, strops.

COVER TECHNOLOGY

The interaction between core, cover and deck gear are fundamental elements of a rope's performance. The Grand Prix Series blends technical materials to impart application specific properties to the cover.

The properties of different materials will have varying impact on the interaction between rope & deck gear, by blending different materials in different ratios we are able to best utilize these material properties to produce the perfect rope performance.

The data on page 13 details our standard blend covers & their relative performance in terms of abrasion resistance, load holding capability & winch easing.

Grand Prix Series covers can be specifically and uniquely customised to particular requirements using different material blend ratios and blends of 3 or even 4 materials.

COVER CONSTRUCTIONS

All Grand Prix Series ropes are fully customisable. Different cover constructions have different properties and performance characteristics.

24 plait – thicker cover, offers excellent grip, good durability and flexibility. Easy to splice with all core configurations and is the standard cover construction for most running rigging applications

32 plait – thinner cover, smooth running through blocks and sheaves. Often used when a larger core is needed for strength without increasing diameter, but is more technical and time consuming to splice than 24 plait.

48 plait – very thin cover, very smooth and easily expandable. Normally made with Dyneema offering outstanding resistance to abrasion so used for chafe gear and covers for loops and lashings. Also used for standing rigging overbraids.

FIBRE	STRENGTH		MODULUS		ELONGATION	SPECIFIC GRAVITY	MELTING POINT	CRITICAL TEMPERATURE	CREEP PERFORMANCE	CHEMICAL RESISTANCE	UV RESISTANCE
	G/DEN	GPA	G/DEN	GPA							
DYNEEMA® SK99 (UHMWPE)	48	4.1	1800	132	3.6	0.975	144-152	80	GOOD	EXCELLENT	VERY GOOD
DYNEEMA® SK90 (UHMWPE)	44.7	3.8	1625	140	3.5	0.975	144-152	80	GOOD	EXCELLENT	VERY GOOD
DYNEEMA® SK78 (UHMWPE)	40	3.4	1267	110	3.5	0.975	144-152	80	GOOD	EXCELLENT	VERY GOOD
DYNEEMA® DM20 (UHMWPE)	35	3	1042	90	3.6	0.975	144-152	80	VERY GOOD	EXCELLENT	VERY GOOD
ZYLON® TYPE HM (PBO)	42	5.8	1948	270	2.5	1.56	650	N/A	VERY GOOD	FAIR	POOR
ZYLON® TYPE AS (PBO)	42	5.8	1302	180	3.5	1.54	650	N/A	VERY GOOD	FAIR	POOR
ZYEX® (PEEK)	6.5	-	-	-	30	1.3	334	250	N/A	VERY GOOD	VERY GOOD
TEFLON® (PTFE)	2	0.36	13	-	8.5	2.1	310	288	N/A	EXCELLENT	EXCELLENT
TECHNORA® (PARA-ARAMID)	27	3.4	590	73	4.5	1.39	500	N/A	VERY GOOD	FAIR	FAIR
TWARON® (PARA-ARAMID PPTA)	23	2.9	600	78	3.55	1.44	450	N/A	VERY GOOD	FAIR	FAIR
VECTRAN® (LCP)	25.9	3.2	600	75	3.8	1.41	350	N/A	EXCELLENT	GOOD	GOOD
POLYESTER	9.5	1.13	125	15	12.5	1.38	260	N/A	GOOD	AFFECTED BY ALKALIS	VERY GOOD
POLYAMIDE (NYLON 6)	8.7	0.96	80	8	24	1.14	220	N/A	GOOD	AFFECTED BY ALKALIS	GOOD

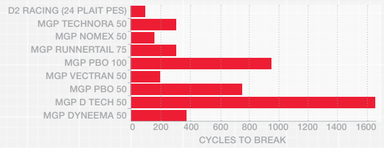
STANDARD MARLOW CORE TO COVER RATIOS

CORE COVER MATRIX

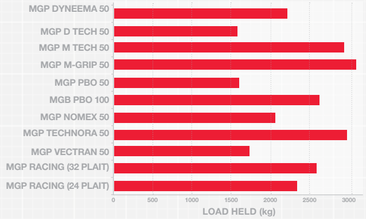
COVERED ROPE DIAMETER (mm)	6	7	8	10	12	14	16
CORE DIAMETER (mm)	4	5	6	7	9	10	11
COVERED ROPE DIAMETER (mm)	18	20	22	24	26	28	
CORE DIAMETER (mm)	13	15	16	18	19	20	

ABRASION RESISTANCE

TEST PERFORMED AROUND 2" HEAVILY GNARLED BAR



LOAD HELD IN CLUTCH/JAMMER



COVERS

MGP RACING 100

24 Plait, 100% Polyester cover offers good all-round performance. Cost effective option for general purpose lines subjected to relatively low heat and abrasion.

Clutch & Jammer Performance
Winch Drum Performance
Abrasion Resistance
Thermal Resistance
Water Absorption
Weight

LOW HIGH

MGP PBO 100

ZYLON

24 Plait, 100% PBO has outstanding heat & abrasion resistance properties for high load, high temperature applications. Use for runners and high load sheets where winch easing is of particular importance.

Clutch & Jammer Performance
Winch Drum Performance
Abrasion Resistance
Thermal Resistance
Water Absorption
Weight

LOW HIGH

MGP PBO 50

ZYLON

24 Plait PBO & Polyester blend offers higher heat & abrasion resistance that MGP Technora 50, but at the expense of grip. More turns required on the winch, but will ease smoothly.

Clutch & Jammer Performance
Winch Drum Performance
Abrasion Resistance
Thermal Resistance
Water Absorption
Weight

LOW HIGH

MGP TECHNORA 50

Technora

24 Plait Technora & Polyester blend is the workhorse of Grand Prix racing. Great heat & abrasion resistance & a perfect balance between grip & easing on winches. Perfect for Jib & Spin sheets as well as Halyards while racing round the cans, where fewer turns on the winch are needed for transition efficiency.

Clutch & Jammer Performance
Winch Drum Performance
Abrasion Resistance
Thermal Resistance
Water Absorption
Weight

LOW HIGH

MGP VECTRAN® 50

Vectran

24 Plait Vectran Polyester blend is favoured by single handed sailors. Easier to ease than MGP Technora 50 and will slip sooner when over-loaded. Good for general use, sheets etc.

Clutch & Jammer Performance
Winch Drum Performance
Abrasion Resistance
Thermal Resistance
Water Absorption
Weight

LOW HIGH

MGP DYNEEMA® 50

24 Plait Dyneema & Polyester blend. MGP Dyneema 50 is lighter and has less water uptake than other cover combinations making it ideal for lightweight sheets, light halyards for locks and halyard tails.

Clutch & Jammer Performance
Winch Drum Performance
Abrasion Resistance
Thermal Resistance
Water Absorption
Weight

LOW HIGH

MGP P TECH 50

Technora ZYLON

24 Plait PBO & Technora blend offers excellent heat resistance in high load, high temperature applications such as gennaker sheets, runners & high load mainsheets. Better grip that 100% PBO, but the blend offers the winch easing properties of PBO.

Clutch & Jammer Performance
Winch Drum Performance
Abrasion Resistance
Thermal Resistance
Water Absorption
Weight

LOW HIGH

MGP M-GRIP 50

ZYLON

24 Plait PBO & Zyex blend. Independent tests prove that M-Grip out performs any other rope in clutch holding & winch grip performance. Added to this outstanding thermal & abrasion resistance properties, this truly is the ultimate MGP cover.

Clutch & Jammer Performance
Winch Drum Performance
Abrasion Resistance
Thermal Resistance
Water Absorption
Weight

LOW HIGH

MGP D TECH 50

Technora

24 Plait or 32 Plait Dyneema and Technora blend is also the standard cover for our Superyacht Series Oceanus. Dyneema offers outstanding abrasion resistance whilst Technora offsets the poor heat tolerance and low friction of the Dyneema. Great for captive winches, pinch rollers, small pin diameters and applications with extreme abrasion.

Clutch & Jammer Performance
Winch Drum Performance
Abrasion Resistance
Thermal Resistance
Water Absorption
Weight

LOW HIGH

OTHER ROPES & ACCESSORIES

MGP FURLER 50

Vectran

Diameters: 7-12mm
Construction: 16 or 24 Plait | Vectran / Polyester Snakeskin
Core Material: Polypropylene or Dyneema D12
Colours: Natural / Any
Aplication: Continuous furling systems

Snakeskin pattern allows easy end-to-end splicing with no diameter increase. Vectran or Technora cover ensures heat and abrasion resistance. Has a sacrificial Polypropylene core as standard, but can be up graded to a D12 core for higher load furling systems.

LASHLINE

Diameters: 2.5mm – 10mm
Construction: 16 Plait | Dyneema SK90
Coating: SiliconCoat
Colours: White
Application: Lashings and strops

DIAMETER (mm)	2.5	3	3.5	4	5	6
BREAK LOAD (kg)	740	1100	1460	1840	2200	3300
WEIGHT (kg/100m)	0.37	0.55	0.73	0.92	1.1	1.65

Designed specifically for lashings and custom made loops. Lashline offers exceptional efficiency thanks to it's low twist construction and silicon coating. The coating allows each leg of the lashing or loop to slide and bed in, perfectly distributing the load to maximise breaking efficiency.

STANDING RIGGING OVERBRAIDING

Technora

Diameters: 8mm – 32mm
Construction: 48 Plait or 32 Plait I Technora
Coating: None
Colours: Black

Diameters: 8mm – 32mm
Construction: 48 Plait or 32 Plait I Dyneema
Coating: None / ArmourCoat
Colours: White or Black

Overbraiding of cables, standing rigging or specialist strops. Construction, material type and coating will depend on the particular customised requirement.

LIFELINE

Diameters: 4mm, 6mm & 7mm
Construction: Dyneema SK78
Core: D12 Max
Coating: Amourcoat
Colours: Black
Application: Life lines

High strength, very low elongation and creep, manufactured to exacting diameter specification for use as abrasion resistant, lightweight fibre life lines.

CHAFE SLEEVE (TECHNORA)

Technora

Diameters: 8mm – 20mm
Construction: 48 Plait | Technora®
Coating: None
Colours: Black
Application: High wear rope sections, halyard tips, custom loop covers.

48 Plait construction allows this cover to open up easily, making it perfect additional rope cover. Excellent heat resistance and high co-efficient of friction make this a good protective cover for heat prone areas or as an aid to technical splices.

CHAFE SLEEVE (DYNEEMA)

Diameters: 8mm – 20mm
Construction: 48 Plait I Dyneema
Coating: None
Colours: White or PU coated Black
Application: High temperature or friction areas

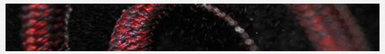
48 Plait construction allows this cover to open up easily, making it perfect additional rope cover, tip or loop cover. Excellent for areas of high abrasion where very low friction is not an issue.

ARMOURCOAT

Pre-mixed rope coating for abrasion resistance available in black, red, blue, yellow & green.

CUSTOMISATIONS

DRI COAT



Marlow DriCoat is not just a simple exterior coating, but rather a unique and extremely effective rope impregnation formula.

Ropes become wet very easily on board high performance racing yachts; breaking waves and spray, a sudden downpour and very cold conditions all cause water uptake in ropes.

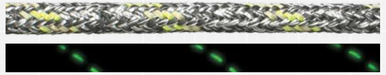
A wet rope can be up to 50% heavier than a dry one - with the quantity of rope on-board racing yachts, that additional weight can soon add up. DriCoat is designed to provide long lasting protection against water absorption and therefore unnecessary on-board weight.

In addition DriCoat significantly improves both internal and external abrasion and the effects of freezing and ice damage, thereby allowing the ropes to perform better for longer.

HOIST MARKERS

Countdown hoist markers are added to the cover during braiding and assist grinders in timing sail hoist perfectly. Hoist markers will use the same material blends as the rest of the rope to maintain cover stability.

GLOW IN THE DARK MARKERS



Glow in the dark or retro-reflective markers can be used along the full length of the rope to improve rope identification and visibility at night.

DIAMETER INCREASE

Core inserts are precisely positioned before cover braiding and increase rope diameter at a specific point on the rope. Inserts not only increase rope diameter, but also help maintain rope shape for improved clutch and jammer performance.

CUSTOM TAPERS

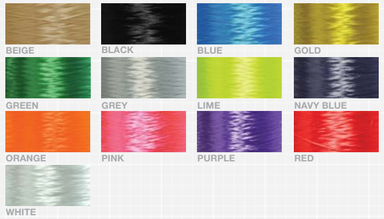
Cores can be tapered before the cover is over braided. The cover construction is then subtly altered during braiding to form an invisible rope taper. Core tapering decreases rope weight and improves flexibility on light tails.

VARIABLE COVER BRAIDS

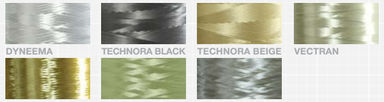
Different properties such as greater firmness, more flexibility or improved splicability can be imparted along the length of a single rope, using Marlow's variable cover braid technology.

COLOUR CUSTOMIZATION

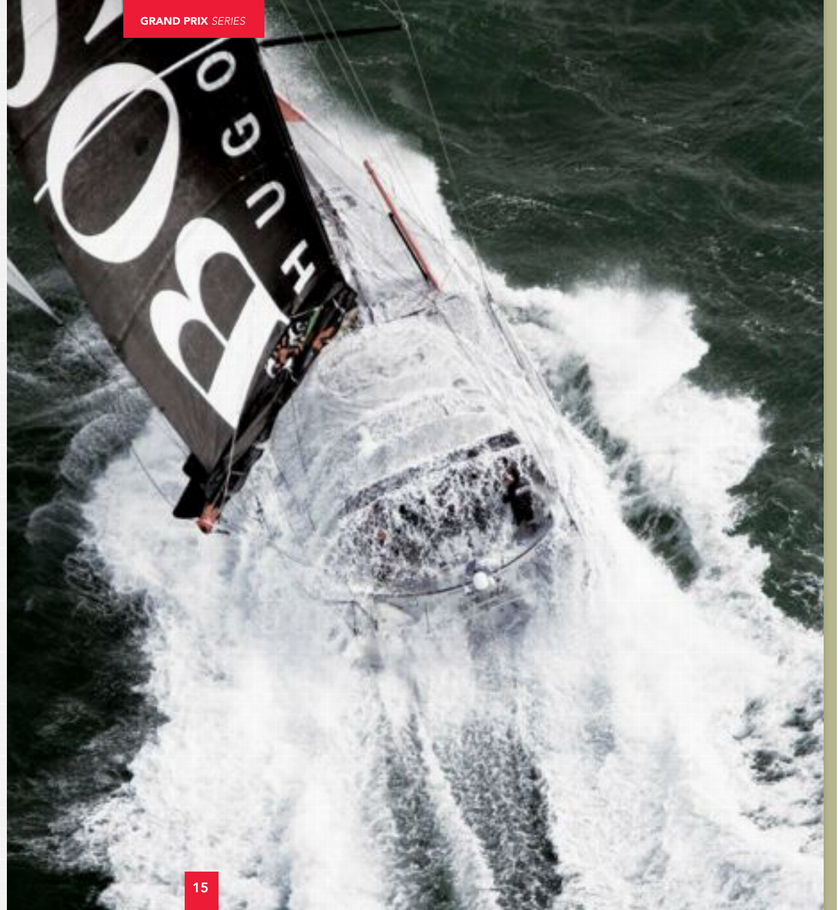
POLYESTER YARN STANDARD COLOURS AVAILABLE:



TECHNICAL FIBRES:



The identification of ropes is fundamental on board racing yachts especially aboard shorthanded boats. Grand Prix Series covers are custom made and can be specified with custom colours and fleck patterns to distinguish ropes for different on board applications, helping to improving crew efficiency.



SUPERYACHT *SERIES*

When managing the technical challenges, quality requirements and tight deadlines of the world's largest superyachts, we need a partner who we can work with to meet the customers' exacting demands and high expectations. Marlow with their Superyacht Series are able to deliver on all levels.
ED DANBY, DIRECTOR MARINE RESULTS

Marlow's Superyacht Series draws upon our experience and success gained from the international race boat market. The Superyacht Series is a range of running rigging and mooring lines designed and custom made to the exacting specifications of Superyachts and Megayachts. Manufactured without compromise, the Superyacht Series offers customised quality, performance, aesthetics and innovation unrivalled in the industry.

SUPERYACHT *PROJECTS & TECHNOLOGY*

TECHNOLOGY

SUPER HIGH STRENGTH: Our range of Dyneema SK99 ropes provide higher break loads for a given diameter, meeting the increasing demands on running rigging for higher loads and increased safety factors.

BESPOKE COLOUR WAYS: With 20 different colours and countless combinations of blends, flecks and patterns, Marlow running rigging can be customised to exacting cosmetic specifications to match the aesthetics of the yacht.

CUSTOM MATERIAL BLENDS: Different blends of exotic materials developed from the racing success of the Grand Prix Series, offer improved longevity and enhanced handling and abrasion characteristics.

CAPTIVE WINCHES: Dyneema SK78 XBO: XBO Improves resistance to flex fatigue by a factor of 5 over standard SK78. On captive winches where ropes experience multiple cycles over the same section, XBO treatment can significantly extend rope life.

CUSTOM TAPERS: Custom tapered cores to exacting length specifications, combined with machine-tapered covers offer significant weight savings and improved flexibility on light tails.

MACHINE FINISHED SPLICES: For the perfect finish, we work with our Grand Prix Rigging and Superyacht rigging partners to supply machine finished splices that improve the splice aesthetics and help to reduce the splice diameter.

RECENT PROJECTS

Full and partial running rigging and mooring ropes through our Superyacht partners

AGLAIA
66M DUBOIS

MIKHAIL S. VORONTSOV
65M DYKSTRA

ATHOS
62M HOEK

SEAHAWKE
60M PERINI NAVI

ZENJI
56M PERINI NAVI

SALUTE
56M PERINI NAVI

ADELA
55M DYKSTRA

PRANA
52M DUBOIS

SALPERTON
45M DUBOIS

LADY B
45M DUBOIS

CLEAR EYES
43M PAX NAVI

CINDERELLA IV
39M VITTERS

KENORA
32M LUCA BRENTA

LIONHEART
J CLASS

HANUMAN
J CLASS

MY CANDYSCAPE II
42M VIAREGGIO

MY TACANUYA
56M SWIFTSHIPS

MY LOLA
36M PEER GYNT

MY LE CAPRICE III
PERSHING 90

RUNNING RIGGING

D12

Construction: 12 Strand Dyneema®
Material: Dyneema® SK78 or SK99, both with Marlow ArmourCoat. Dyneema® SK99 offers approximately 20% strength improvement over standard SK78 whilst maintaining similar creep properties
Colours: Black or White
App: Uncovered lines including halyards on hydraulic rams, lashings, strops, cascades and wire replacement.

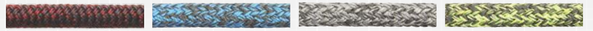
DIAMETER (mm)	11	13	15	16	18	20	22	24	28	32	36	40	44	48
BREAK LOAD 99 (t)	13.8	18.4	21.4	24.5	29.2	38.9	55.9	64.4	82.9	107	134	163	187	215
BREAK LOAD 78 (t)	11.6	15.9	18.4	21.1	25.2	33.5	47.0	54.1	69.7	89.6	113	137	157	187
WEIGHT (kg/100m)	5.82	8.00	9.80	11.8	14.3	18.0	27.5	31.7	42.2	54.9	71.8	88.7	106	127

SUPERYACHT D2

Core Construction: 12 Strand pre-stretched Dyneema®
Core Material: Dyneema® SK78 or SK99, both with Marlow ArmourCoat. Dyneema® SK99 offers approximately 20% strength improvement over standard SK78 whilst maintaining similar creep properties
Cover Construction: 24 Plait Polyester cover available in custom colours to order
Applications: Excellent all round rope for most on-board applications. Superyacht D2 is strong and flexible making it ideal for halyards, sheets, guys, control lines, reefing lines.
Extras: Customised, length and colours for a bespoke finish. Available with machine finished splices for additional security and aesthetics.

DIAMETER (mm)	12	14	16	18	20	22	24	28	30	32
BREAK LOAD 99 (t)	8.26	11.0	13.8	18.4	21.4	24.5	29.2	38.9	48.7	55.9
BREAK LOAD 78 (t)	6.90	9.27	11.6	15.9	18.4	21.1	25.2	33.5	41.0	47.0
WEIGHT (kg/100m)	9.29	11.6	14.7	18.5	23.0	29.0	38.7	48.2	55.9	61.6

SUPERYACHT D2 GRAND PRIX



Core Construction: 12 Strand pre-stretched Dyneema®
Core Material: Dyneema® SK78 or SK99, both with Marlow ArmourCoat. Dyneema® SK99 offers approximately 20% strength improvement over standard SK78 whilst maintaining similar creep properties
Cover Construction: 24 Plait Technora / Polyester blend, cover available in custom colours to order
Applications: Excellent all round rope for most on-board applications. Superyacht D2 Grand Prix offers additional abrasion and heat resistance over stand polyester covers. As with S/Y D2, the rope is strong and flexible making it ideal for most applications
Extras: Customised, length and colours for a bespoke finish. Available with machine finished splices for additional security and aesthetics.

DIAMETER (mm)	12	14	16	18	20	22	24	28	30	32
BREAK LOAD 99 (t)	8.26	11.0	13.8	18.4	21.4	24.5	29.2	38.9	48.7	55.9
BREAK LOAD 78 (t)	6.94	9.27	11.6	15.9	18.4	21.1	25.2	33.5	41.0	47.0
WEIGHT (kg/100m)	9.29	11.6	14.7	18.5	23.0	29.0	38.7	48.2	55.9	61.6

D12 MAX

Construction: 12 Strand Super pre-stretched Dyneema®
Material: Dyneema® SK78 or SK99, both with Marlow ArmourCoat. Dyneema® SK99 offers approximately 20% strength improvement over standard SK78 whilst maintaining similar creep properties
Colours: Black or White
Applications: Extreme high load or where lines are diameter critical or require higher safety factors. Uncovered lines including halyards on hydraulic rams, lashings, strops, cascades and wire replacement.

DIAMETER (mm)	9	11	13	15	17
D12 MAX 99 BREAK LOAD (t)	12.5	17.5	24.5	30.7	38.1
D12 MAX 78 BREAK LOAD (t)	10.8	15.1	21.1	26.4	32.9
WEIGHT (kg/100m)	5.40	7.55	10.7	13.4	18.4

SUPERYACHT V2

Core Construction: 12 Strand Vectran®
Core Material: Vectran® with Marlow ArmourCoat
Cover Construction: 24 Plait Polyester cover available in custom colours to order
Applications: Excellent for applications requiring zero creep where UV exposure can be managed – halyards
Extras: Customised, length and colours for a bespoke finish. Available with machine finished splices for additional security and aesthetics.

DIAMETER (mm)	12	14	16	18	20	22	24
BREAK LOAD (t)	8.86	11.0	12.0	14.7	18.4	22.7	25.1
WEIGHT (kg/100m)	10.7	13.4	17.1	22.1	27.3	33.8	42.5

MOORING

SUPERYACHT DOCKLINE

DIAMETER: 24-64mm

24 PLAIT COVER | POLYESTER | OPTI TWIST DOUBLEBRAIDED CONSTRUCTION

APPLICATION : **MOORING**

DIAMETER (mm)	24	28	32	36	40	44	48	52	56	60	64
BREAK LOAD (t)	11.0	16.0	21.0	27.0	33.0	38.0	46.0	53.0	64.0	70.0	83.0
WEIGHT (kg/100m)	39.1	55.8	73.9	95.1	118	135	165	189	229	252	298

Shock absorbing polyester opti-twist core with a tough polyester cover. Manufactured from Opti-twist polyester to give excellent extension and shock absorbing properties.

SPLICED LEATHERED EYES, COLOUR CODED WHIPS

APPLICATION : **MOORING**

Marlow's Superyacht Docklines can be custom ordered to length with factory spliced and leathered eyes and colour coded whips for easy identification.

SUPERYACHT FENDERLINE

16 & 24 PLAIT | POLYESTER COVER

APPLICATION : **MOORING**

DIAMETER (mm)	12	14	16	18	20
BREAK LOAD (t)	4.15	6.25	7.6	9.05	10.7
WEIGHT (kg/100m)	9.71	12.7	16.6	21.0	24.8

Shock Absorbing Core, Abrasion Resistance, Easily Spliced, Comfortable to Handle.

DYNALINE

12 STRAND DYNEEMA® SK75

APPLICATION : **WINCHING**

DIAMETER (mm)	6	8	9	10	11	12
BREAK LOAD (t)	3.00	6.00	8.00	10.0	12.0	13.0
WEIGHT (kg/100m)	16.0	30.9	3.80	4.86	5.71	6.64

Specially designed for winching, Dynaline offers a strong, safe and light alternative to wire on davits and cranes.

OCEANUS

OCEANUS

Core Construction: 12 Strand Pre-Stretched Dyneema SK78.
Also available in: SK99: Up to 20% stronger than SK78 for high load applications. Marlow GripCoat for core/cover adhesion.
SK78 cores available with "XBO fibre treatment" for improved flex fatigue resistance.
Cover Construction: 24 plait or 32 Plait Dyneema® and Technora® Blend for excellent abrasion and heat resistance. Custom made to length with factory spliced and over-braided terminations to eliminate the possibility of splice induced cover slack. Lines made to exact specifications for diameter critical applications.
Applications: Specifically designed for captive winch applications to overcome typical problems, including, diameter critical winch drums, cover slack build up, high abrasion and friction induced heat damage.
Specialist Coating: Cores are coating with Marlow GripCoat to enhance cover cover adhesion, thereby eliminating cover slip which can be induced by captive winches causing damage to rope and winch.

DIAMETER (mm)	16	18	20	22	24	26	28	30
BREAK LOAD (t)	12.0	15.0	20.0	23.0	34.0	44.0	41.0	47.0
WEIGHT (kg/100m)	13.0	17.0	17.4	20.8	27.6	35.5	42.4	46.6

	32	34	36	38	40	42	44	48
	54	64	70	83	90	101	112	125
	52.4	61.9	67.7	79.4	88.3	98.4	112	126

OCEANUS CASE STUDY

Superyacht rigging specialists Marine Results asked Marlow to work with them to overcome technical challenges they were facing with the ropes on the 66m Dubois, Aglaia.

Counteracting forces and frequent cyclic bending from the captive winches created cover slip in the existing ropes. The excess and baggy cover resulted in damage to the ropes as well as hampering the smooth running of the winches.

In addition, very high loads combined with a 3:1 factor of safety caused issues with rope diameter limitations from winches and deck gear. This was especially so along the tail of the splices which were required to exit through a specific and unchangeable diameter hole in the mast.

Our Technical Sales and Engineering Teams worked closely with the team at Marine Results to specify and manufacture a rope that solved these issues within the timescales.

It was decided to use Oceanus, with its specially coated core to aid core / cover interaction and reduce coverslip. The specially designed SK90 core helped achieve the necessary break loads and the Dyneema and Technora blended cover gave the right compromise of grip and abrasion resistance to ensure smooth and efficient running on and off the winches. These design and manufacturing processes produced a rope within the diameter tolerances of the winches.

Finally Marine Results' own splicers worked with our rope technicians to produced machine finished splices that improved splice strength and aesthetics whilst helping to minimise diameter increase at the neck and along the tail.

The results of this teamwork were custom made ropes that met the tough application demands and the high expectations of the customer.

CLASSIC SERIES

For the past 4 years we have used Marlow's Classic Series ropes supplied and rigged by T-E-C in Palma. As well as looking great and saving weight, the importance of having complete confidence in your ropes on a racing classic like Avel cannot be overstated
CHRIS AUSTIN, CAPTAIN, AVEL

The Classic Series brings Marlow's knowledge of high-tech, performance running rigging from out Grand Prix Series and Standard Range to traditional and classic yacht's.

As well as looking beautiful, many classics are hard racers and classic racing is every bit as competitive as their modern counterparts. These seasoned racers demand the latest running rigging technology without compromising the yachts aesthetics.

The solid white and natural colours of the Classic Series mask the use of exotic materials and high tech manufacturing processes, blending perfectly with the teak decks, wooden spars and polished fittings of any classic craft.

CLASSIC PROJECTS

CLASSIC RIGGING

Classic yachts have traditionally used wire or rope-to-wire halyards. However, modern materials and greater sympathy towards the look of classic yachts means that more and more classic yacht owners are moving to synthetic fibre and away from traditional wire halyards.

The benefits of synthetic rope over steel wire are significant and the reason why most cruising yachtsmen no longer see wire as relevant, especially considering the advancements in sailcloth.

- Significant weight saving
- Performance improvements
- Easier to handle
- No wire splinters
- No rope-to-wire splicing required
- Easier to eye splice
- Improved safety
- Easier to maintain
- Longer lasting
- Reduced chafe on sails and gear

Some classics continue to use traditional natural fibre ropes such as sisal or manila. Modern synthetic ropes can replicate the look of these traditional products but with significantly improved reliability and longevity.

Classic Rigging is an art form in itself and an experienced classic rigger will specify a balanced range of ropes and materials. Jean-Michel Rouve of Trabajos En Cabos says "a classic rigger must use their understanding of the boat and its use, they will know that rigging a classic with too many high strength, low stretch ropes can cause fatigue and unnecessary damage to the hull and spars".

Using a mixture of Dyneema and polyester ropes to balance performance improvements with the peculiarities of old boats made with old materials, is the skill of the classic rigger.

The table below compares to break loads and weights of Marlow:

	7X19 STAILESS WIRE		DOUBLEBRAID		V2		D2 78		D12 99*	
DIA.	BREAK LOAD	MASS (kg/100m)	BREAK LOAD	MASS (Kg/100m)	BREAK LOAD	MASS (kg/100m)	BREAK LOAD	MASS (kg/100m)	BREAK LOAD	MASS (kg/100m)
6mm	2356	13.4	1390	2.80	1678	2.77	2056	2.41	2356	1.28
8mm	4181	24.3	2560	4.80	3350	4.89	3467	3.90	5360	2.80
10mm	6536	37.9	3690	7.47	5750	6.65	5360	5.92	11592	5.82
12mm	9412	57.8	4760	11.1	8680	10.7	6940	9.29	11592	5.82
14mm	12808	76.8	6050	15.6	10980	13.4	9274	11.7	14919	7.60

* Diameters used for D12 99 comparisons are 1mm small than those detailed for the other products in this table

RECENT PROJECTS

Full and partial running rigging and mooring ropes through our Classic Rigging Partners

MOONBEAM
HALLOWE'EN
TUIGA
HISPANIA
ALTAIR
MARIETTE
EILLEAN
AVEL
CREOLE
SEVEN SEAS
SHENNADOAH
ADIX
ARGYLL
IKRA
STORMY WEATHER

HIGH TECH CLASSICS

MGP TECHNORA® 50

Construction: 12 strand Dyneema® SK78 Core*, 24 Plait MGP Technora® 50 Cover
Applications: Marlow's Super Pre-Stretch process, ArmourCoat
Lengths: Made to order

DIAMETER (mm)	8	10	12	14	16
BREAK LOAD (kg)	3487	5360	6690	9274	11592
WEIGHT (kg/100m)	3.90	5.92	9.29	11.7	14.7

50/50 Technora® / Polyester cover provides even greater performance in clutches, jammer and around winch's. The cover improves heat resistance, grip and abrasion resistance compared to D2 Racing 78. Cores can be colour coded to match cover for a more traditional look.
** Large diameters and alternative core options are available, including D12 78 Max, D12 90 & D12 Max 90*

V2 RACING

Construction: 12 strand Vectran® core with 24 plait polyester cover
App: Halyards, Guys, Control lines, out/Downhauls, Runnertails, vang
Lengths: 100m, 200m

DIAMETER (mm)	8	10	12	14	16	18
BREAK LOAD (kg)	3500	5750	8680	10980	11950	14700
WEIGHT (kg/100m)	4.70	7.35	10.6	14.4	18.8	23.8

No stretch or creep. No re-tensioning of halyards, maintaining perfect sail shape and trim. Polyester jacket provides superior performance in clutches and jammers and gives excellent abrasion resistance and greater longevity.

D2 RACING 78

Construction: 12 strand Dyneema® SK78 core with 24 plait polyester cover
Applications: Halyards, Sheets, Guys, Control lines, Out/Downhauls, Reefing lines, Runner-tails, Vang, Furlers
Lengths: 100m, 200m

DIAMETER (mm)	8	10	12	14	16	18
BREAK LOAD (kg)	3487	5360	6690	9274	11592	14919
WEIGHT (kg/100m)	3.90	5.92	9.29	11.7	14.70	18.5

Dyneema® SK78 core is light weight - reduces onboard weight and makes the rope easier to handle.

Dyneema® SK78 core is high strength - upgrade polyester halyards by choosing a smaller diameter and achieve further weight savings and handling improvements. Pre-stretching the core results in very low stretch - far fewer rig adjustments when sailing.

24 Plait Polyester jacket provides superior performance in clutches and jammers and gives excellent abrasion resistance and greater longevity. Easily spliced and tapered for a safer rig and further weight saving. Cores can be colour coded to match cover for a more traditional look (see D12)

D12

Construction: 12 strand Dyneema® SK78 with PU Coating
Applications: Control Lines, Lashings, Backstays, Out/Downhauls, Reefing Lines, Vang
Lengths: 200m

DIAMETER (mm)	2.5	3	4	5	6	8
BREAK LOAD (kg)	569	995	2056	2356	3230	5360
WEIGHT (kg/100m)	0.37	0.53	0.98	1.28	1.77	2.40
DIAMETER (mm)	10	12	14	16		
BREAK LOAD (kg)	9274	11592	14919	16171		
WEIGHT (kg/100m)	4.83	5.82	7.60	6.90		

Lightweight, very strong - excellent for lashing and for metal shackle replacement. Marlow ArmourCoat, increases the life of the rope by reducing UV and abrasion fatigue. Does not absorb water so floats and remains light weight when sailing. Quick and easy to splice, less time preparing the boat, more time on the water.

TRADITIONAL CLASSICS

MARLOWBRAID

Construction: 3 Strand Polyester core with 16 plait polyester cover
Applications: Halyards, Sheets, Guys, Control lines, Out/downhauls, Reefing lines, Runner-tails, Vang, Furlers
Lengths: 100m, 200m

DIAMETER (mm)	6	8	10	12	14	16	18	20
BREAK LOAD (kg)	986	1577	2850	4450	5460	7420	10190	11340
WEIGHT (kg/100m)	2.68	4.45	7.30	10.0	14.5	19.3	23.5	28.5

Twisted 3 strand core - gives excellent strength and lower stretch than braid on braid. Tough 16 plait polyester jacket - provides excellent abrasion resistance and longevity. Easily spliced - a great all round rope for most on board applications.

3 STRAND PRE-STRETCHED

Construction: 3 Strand Polyester, pre-stretched
Applications: Halyards, Control lines, General purpose
Lengths: 100m & 200m reels

DIAMETER (mm)	8	10	12	14	16
BREAK LOAD (kg)	1800	2750	3350	4200	5700
WEIGHT (kg/100m)	4.60	9.09	10.0	15.5	17.3

Solid, pre-stetched, strong 3 strand line. Ideal for general purpose use as well as low stretch halyards.

8 PLAIT STANDARD

Construction: 8 plait Polyester
Applications: Flag halyard, Leech lines, General lashing, Whipping
Lengths: 100m & 200m reels

DIAMETER (mm)	1.5	2	3	4
BREAK LOAD (kg)	90	130	210	359

Solid polyester line, ideal for burgee and signal halyard, leech lines, as well as general lashings and decorative whipping. 2mm & 3mm white available in mixed packs of handy Mini-Spools.

DOUBLEBRAID

Construction: 12 Strand Braided polyester core with 24 plait polyester cover
Applications: Sheets, Guys, Control lines, Out/Downhauls, Runner-tails, Reefing lines, Vang, Furlers
Lengths: 100m, 200m

DIAMETER (mm)	6	8	10	12	14	16	18
BREAK LOAD (kg)	1390	2560	3690	4760	6050	7230	7910
WEIGHT (kg/100m)	2.84	4.80	7.47	11.1	15.6	19.3	23.2

Braid on Braid construction – easily spliced. Versatile rope can be used on most applications on cruising boats. Construction provides a soft and flexible rope – easy handling versatile rope can be used on most applications on cruising boats.

3 STRAND POLYESTER

Construction: 3 Strand Polyester
Applications: General Purpose, mooring
Lengths: 100m & 200m reels

DIAMETER	4	6	8	10	12	14	16	18	20	24	28	32
BREAK LOAD	529	951	1465	2570	3170	3930	4766	6600	9230	11210	14640	18840
WEIGHT	1.21	2.73	4.80	7.85	10.9	14.9	19.4	24.6	30.3	46.0	62.8	82.0

The classic 3 strand line, Marlow's 3 Strand is manufactured using the highest quality materials to produce a rope of the highest quality with the perfect flexibility and firmness. Polyester wont degrade in UV and remains supple and strong even when wet.

WHIPPING TWINE

Material: Waxed Polyester
Lengths: 41m, also available in bulk 1kg cops

Marlows world famous whipping twine has a waxy finish to keep the whip secure.

CRUISER & RACER *SERIES*

Marlow's ability to combine leading edge manufacturing techniques with the constant development of new fibres makes them a welcome supplier to the Clipper Round the World Yacht Race.
SIR ROBIN KNOX-JOHNSTON - SAILING LEGEND AND FOUNDER OF CLIPPER ROUND THE WORLD RACE

For the 5th consecutive race, Marlow are the official rope supplier to the Clipper Round the World Race.
It goes without saying that when circumnavigating the globe in a race against 11 other yachts, the ropes on board experience the best and worst conditions that the Southern Ocean, Atlantic and Pacific have to offer.

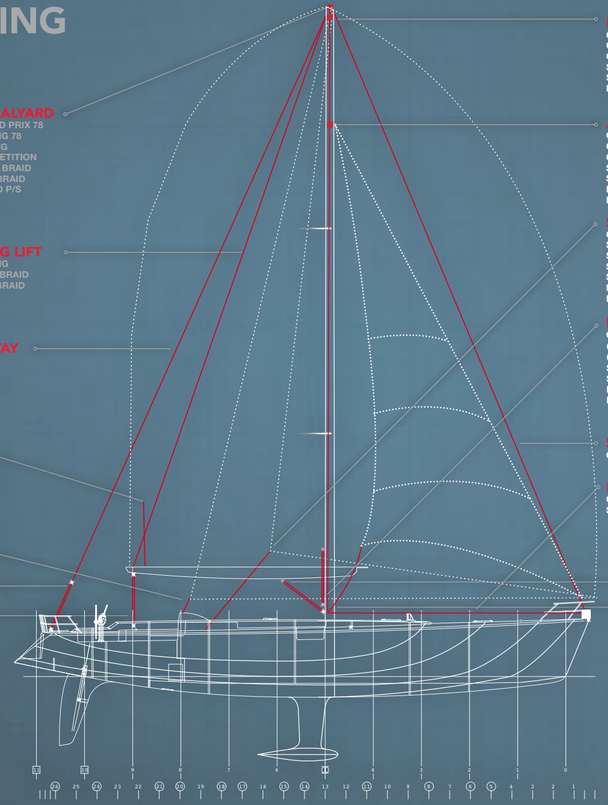
However, the ropes supplied on all 12 Tony Castro design Clipper 70's are not super expensive, custom made ropes using exotic fibres and cutting edge manufacturing techniques. They are ropes that you will find in any chandlery around the world that stocks Marlow... and when they've completed 11 months of punishment, they're ready to do another 40,000 miles.

For the team at Clipper Ventures, hard racing is the name of the game, but so too is safety and durability – that is why they have chosen Marlow for their past 4 round the world races and for the 2013 -14 edition too.

Marlow's ropes have been tried and tested time and again in the toughest conditions imaginable, time and again they deliver.... performance, safety, durability.

If the ropes in this catalogue (which are available to any consumer on 6 continents around the world) are good enough to be chosen by the world's longest round the world yacht race year after year – what products would you recommend?

RUNNING RIGGING DEFINITIONS



MASTHEAD HALYARD
- SPINNAKER
- GENNAKER
- CODE ZERO
- GENOA

G D2 GRAND PRIX 78
G D2 RACING 78
G D2 RACING
S D2 COMPETITION
S MARLOWBRAID
B DOUBLEBRAID

MAIN HALYARD
G D2 GRAND PRIX 78
G D2 RACING 78
G V2 RACING
S D2 COMPETITION
S MARLOW BRAID
B DOUBLEBRAID
B 3 STRAND P/S

JIB HALYARD
G D2 GRAND PRIX 78
G D2 RACING 78
G V2 RACING
S D2 COMPETITION
S MARLOW BRAID
B DOUBLEBRAID
B 3 STRAND P/S

TOPPING LIFT
G D2 RACING
S MARLOWBRAID
S DOUBLEBRAID

SPINNAKER / GENNAKER SHEET
G D2 GRAND PRIX 78
S D2 RACING 78
S D2 COMPETITION
S DOUBLEBRAID
S MARLOWBRAID
B EXCEL FUSION
B MATTBRAID

BACKSTAY
G D12 MAX
G D12

DOWNHAUL/ CUNNINGHAM
CONTROL LINE TAILS
G D2 RACING 78
G D2 COMPETITION
S EXCEL FUSION
S DOUBLEBRAID
B MATTBRAID
B EXCEL PRO

SPINNAKER FURLING CABLE
G PRODRIVE

REEFING LINES
G D2 GRAND PRIX 78
S D2 RACING 78
S DOUBLEBRAID
B MARLOWBRAID

FURLING LINE
G MGP FURLER
S DOUBLEBRAID

GENOA / CODE ZERO SHEET

BACKSTAY ADJUSTER
D12 (BRIDLE)
G D2 RACING
S MARLOWBRAID
B MATTBRAID

MAIN SHEET
G D2 GRAND PRIX 78
S D2 RACING 78
S D2 COMPETITION
S DOUBLEBRAID
S MARLOWBRAID
B EXCEL FUSION
B MATTBRAID

JIB SHEET
G D2 GRAND PRIX 78
S D2 RACING 78
S D2 COMPETITION
S DOUBLEBRAID
S MARLOWBRAID
B EXCEL FUSION
B MATTBRAID

VANG / KICKER
CONTROL LINE PURCHASE
G D12 MAX
G D12
S D2 RACING
B MARLOW BRAID

G - GOLD PERFORMANCE
S - SILVER PERFORMANCE
B - BRONZE PERFORMANCE

D2 GRAND PRIX 78

Technora

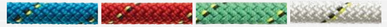
DIAMETER: 8-12mm
12 STRAND DYNEEMA® SK78 CORE | 24 PLAIT POLYESTER/TECHNORA® BLENDED COVER

APPLICATION : HALYARDS SHEETS

DIAMETER (mm)	8	10	12
BREAK LOAD (kg)	3487	5360	6940
WEIGHT (kg/100m)	3.90	5.92	9.29

The ultimate racing halyard available with D12 78 or D12 99 core for additional strength. Lightweight, low stretch, minimal creep with grippy, abrasion resistant cover for excellent jammer performance. Also perfect as a high performance sheet. Lightweight and taperable with blended cover that grips well on winch drums and lasts during the toughest races thanks to it's high melting point.

D2 COMPETITION



DIAMETER: 8-18mm
12 STRAND DYNEEMA® SK78 CORE | 16 PLAIT POLYESTER TRACTION JACKET | 16 PLAIT POLYESTER COVER

APPLICATION : HALYARDS SHEETS CONTROL LINE TAILS

DIAMETER (mm)	8	10	12
BREAK LOAD (kg)	2056	3487	5360
WEIGHT (kg/100m)	4.83	7.63	9.71

A cost effective option for those wishing to gain the low weight and low stretch benefits of Dyneema halyards and sheets. Easily spliced and tapered thanks to the sacrificial inner traction jacket, D2 Competition gives the option to save weight, which improves performance, safety and aids rope handling. Distinctive solid colour covers grip well in clutches and cleats making for a great all-round cost effective Dyneema upgrade.

V2 RACING

Vectran

DIAMETER: 8-18mm
2.12 STRAND VECTRAN CORE | 24 PLAIT BRAIDED POLYESTER COVER

DIAMETER (mm)	8	10	12	14	16	18
BREAK LOAD (kg)	3350	5750	8680	10980	11950	14700
WEIGHT (kg/100m)	4.89	6.65	10.7	13.4	17.1	22.1

The same hardwearing cover as used on the D2 Racing sheaths our V12 Vectran core. Vectran offers zero creep and minimal elongation meaning no re-tensioning of halyards is ever needed, even on long tacks when sailing offshore. As with D2 Racing, the cover provides excellent abrasion resistance along with superior performance in clutches and jammers.

D2 RACING 78

DIAMETER: 8-18mm
12 STRAND DYNEEMA® SK78 CORE | 24 PLAIT POLYESTER COVER

APPLICATION : HALYARDS SHEETS CONTROL LINE PURCHASE

DIAMETER (mm)	8	10	12	14	16	18
BREAK LOAD (kg)	3487	5360	6690	9274	11592	14919
WEIGHT (kg/100m)	3.90	5.92	9.29	11.7	14.7	18.5

Light weight, low stretch and high strength using a colour coded D12 78 core. Use a size smaller than with a polyester halyard thanks to high break loads. Easily tapered, hard wearing cover grips well in clutches. Also use as lightweight, high strength sheet that can be tapered to reduce weight on clew. Brightly coloured polyester cover is easily identifiable runs smoothly and grips well on winches and cleats, so perfect as a high strength, light-weight all-round control line applications.

D12

DIAMETER: 7-15mm
12 STRAND DYNEEMA® SK78 - ALSO AVAILABLE IN SK90 FOR HIGHER STRENGTH

APPLICATION : CONTROL LINE PURCHASE

DIAMETER (mm)	2.5	3	4	5	6	7	9	10	11	13	15
BREAK LOAD (kg)	569	995	2056	2356	3487	5360	6940	9274	11592	14919	18418
WEIGHT (kg/100m)	0.37	0.53	0.98	1.28	1.77	2.80	3.76	4.83	5.82	8.00	9.80

Lightweight and high strength, single braid Dyneema with tough ArmourCoat finish. Excellent for lashings and metal shackle replacement. Best option for wire replacement on a number of applications including cascade purchase systems. Diameters can be reduced for all control line applications from those used for polyester ropes thanks to its high break loads.

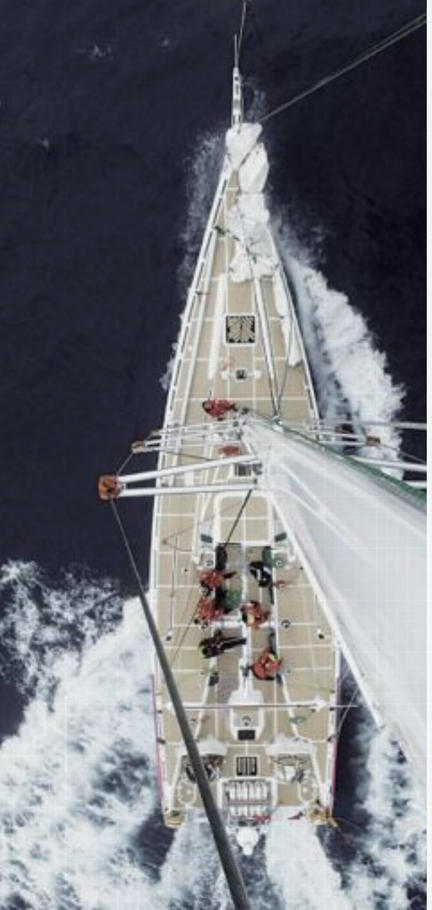
DOUBLEBRAID

DIAMETER: 6-18mm
12 STRAND POLYESTER CORE | BRAIDED POLYESTER 24 PLAIT COVER

APPLICATION : HALYARDS SHEETS CONTROL LINE PURCHASE

DIAMETER (mm)	6	8	10	12	14	16	18
BREAK LOAD (kg)	1390	2560	3690	4760	6050	7230	7910
WEIGHT (kg/100m)	2.84	4.80	7.47	11.1	15.6	19.3	23.2

Our heat set Doublebraid offers industry leading strength and stretch performance for a polyester braid-on-braid. Flexibility and soft feel ensures easy handling around the boat, making this rope ideal for sheets. Easy splicing removes the need for bulky knots at the clue of the sail, which also reduce a ropes strength. Also good for halyards thanks to the heat setting process helping to reduce stretch. Use for most on board applications.



M-RIG MAX

Construction: 12 strand
Material: Dyneema® DM20
Extras: Marlow's Super Pre-Stretch process, ArmourCoat
Features: Ultimate Low Creep, light weight rope.

DIAMETER (mm)	2.5	3	4	5	6	7	8	9	10	11	12	13	15	17
BREAK LOAD (kg)	902	1353	2224	2874	4107	6744	8430	9694	11309	13568	16157	18989	23736	29499
WEIGHT (kg/100)	0.45	0.68	1.11	1.56	2.23	3.56	4.45	5.40	6.30	7.55	9.00	10.7	13.4	18.4

M Rig Max's top benefit is minimal creep ideal for standing rigging and steering lines. Add an MGP cover or light weight chafe cover for high wear applications such as life lines.

M-RIG MAX – SYNTHETIC FIBRE STANDING RIGGING FOR THE CRUISER / RACER

M-Rig Max uses Dyneema's DM20 Max Technology yarn. DM20 exhibits zero creep meaning that it lends itself for use as super lightweight standing rigging. Every kilogram saved aloft equates to a 5-7kg saving at the bottom of the keel, as well as reduced pitching in a head sea.

Marlow's M-Rig Max brings creep free fibre standing rigging within reach of everyday yachtsmen. Traditionally, fibre standing rigging has been incredibly expensive thanks to the use of Zylon (PBO) in a custom-made cable configuration. M-Rig Max uses DM20 and Marlow's Max Pre-Stretching technology to produce a rope that is available to any rigger on a reel.

1. Measure the rig
2. Cut M-Rig Max to length
3. Use simple locking D12 Splice with lashing thimbles
4. Secure and tension using Marlow Lashline (page 14)

The lower modulus of Dyneema DM20 means that even with Marlow's Max Pre-Stretching, to match the stretch exhibited by wire (as measured by mm/mm/1000kg) a larger diameter will be required.

The table also demonstrates that not only is M-Rig Max lighter, it is also 5x stronger that wire for a given stretch factor. Significant strength advantage means that if the initial elastic elongation experienced by Dyneema can be managed (see page 8), a smaller diameter of M-Rig Max can be specified.

The choice of M-Rig Max diameter is a balance between ultimate strength and manageable elongation.

CRUISER & RACER *SERIES*

M-RIG MAX CASE STUDY

YACHT: J-BOATS J97 – 30' CRUISER RACER STANDARD RIGGING.

SECTION	MATERIAL	mm/ mm/100kg	MBL (kg)	MASS g/m	LENGTH (m)	QTY
FORESTAY	-10 Rod	0.00200	4,670	249	12.99	1
TOP SHROUDS	7mm Compact Strand	0.00190	4,910	260	12.56	2
LOWERS	7mm Compact Strand	0.00190	4,910	260	4.82	2
INTERMEDIATE	6mm Compact Strand	0.00259	3,550	194	9.03	2
BACKSTAY	5mm 1x19 Stainless	0.00463	2,000	122	11.00	1
BACKSTAY V	5mm 1x19 Stainless	0.00463	2,000	122	3.72	2
TIE ROD	5mm 1x19 Stainless	0.00463	2,000	122	0.53	1

Total standing rigging weight:18.09 kg (excluding terminations)

Discussions with the rigger suggest than approximately 50% additional elongation within the rig is acceptable and manageable. Windage is not an issue, therefore M-Rig Max is specified as follows:

SECTION	MATERIAL	mm/ mm/100kg	MBL (kg)	MASS g/m	LENGTH (m)	QTY
FORESTAY	11mm M-Rig Max	0.00313	12,618	75.5	12.99	1
TOP SHROUDS	11mm M-Rig Max	0.00313	12,618	75.5	12.56	2
LOWERS	11mm M-Rig Max	0.00313	12,618	75.5	4.82	2
INTERMEDIATE	10mm M-Rig Max	0.00376	10,518	63	9.03	2
BACKSTAY	7mm M-Rig Max	0.00630	6,272	35.6	11.00	1
BACKSTAY V	7mm M-Rig Max	0.00630	6,272	35.6	3.72	2
TIE ROD	7mm M-Rig Max	0.00630	6,272	35.6	0.53	1

Total standing rigging weight:5.47 kg (excluding terminations)

Our case study shows that by using M-Rig Max the total standing rigging is 70% lighter, saving 12.62 kg aloft, but is nearly 3 times as strong as the equivalent wire/rod rig.

If the rigger is able to manage the initial elastic elongation when installing M-Rig Max and the mast can manage the increased deflection during gusts, smaller diameters can be specified, further reducing both weight and windage. In our example above, a further 1.8 kg can be reduced from the rig by specifying M-Rig Max 2mm smaller.

A saving of 14.41 kg in the rig is equivalent to shaving 100kg off the bulb – and the rigging is stronger than with wire.

PRODRIVE - *TORSIONAL FURLING CABLE*

Twaron.

PARA-ARAMID CORE | PARA-ARAMID TORSION JACKET | POLYESTER COVER

DIAMETER (m)	7	9	11	13	15
BREAK LOAD (kg)	2635	4391	6560	7872	13120
WEIGHT (kg/100m)	5.20	8.10	11.6	15.2	25.0

PRODRIVE OFFERS
- FAST FURLING
- EASIER FURLING
- EVEN FURLING
- FASTER SAIL CHANGES
- ECONOMIC OPTION FOR MULTIPLE HEAD SAILS
- INTEGRATES EFFORTLESSLY WITH ANY FURLING UNIT
- UV & ABRASION RESISTANCE.

Check out the video to see how ProDrive works here.

Like most headsail furlers, the furling is controlled by the furler drum at the bottom of the sail. The turning force is transmitted through the length of the ProDrive cable to turn the swivel which is connected to the head of the sail. The tack of the sail is connected to a freely floating point on the drum of the furling unit. The turning force acting at the top of the sail only, causes the head of the sail to furl first and ensures the sail furls down the cable neatly.

The unique requirements of top down furling forced the development of a unique rope construction. Parallel aramid core, tightly braided aramid jacket with a polyester cover ensures ProDrive offers the best torsional stiffness on the market.

MGP FURLER 50

Vectran

POLYPROPYLENE CORE – 16 PLAIT VECTRAN / POLYESTER SNAKESKIN COVER.
DIAMETER: 6-12mm

Snakeskin pattern allows easy end-to-end splicing with no diameter increase. Vectran or Technora cover ensures heat and abrasion resistance. Has a sacrificial Polypropylene core as standard, but can be up graded to a D12 core for higher load furling systems.

MARLOWBRAID

DIAMETER: 6-20mm
3 STRAND POLYESTER CORE | 16 PLAIT POLYESTER COVER
APPLICATION : HALYARDS SHEETS CONTROL LINE PURCHASE

DIAMETER (mm)	6	8	10	12	14	16	18	20
BREAK LOAD (kg)	986	1577	2850	4450	5460	7420	10190	11340
WEIGHT (kg/100m)	2.68	4.45	7.30	10.0	14.5	19.0	23.5	28.5

Our famous polyester line offers class leading low stretch for a polyester rope thanks to its laid 3-strand core construction, making Marlowbraid an ideal halyard rope. The tough 16-plait cover is hard wearing and grips well in clutches also offering great abrasion resistance on winches when used as a sheet. The low stretch core and tough cover makes Marlowbraid ideal for all control line applications such as cascades and vangs.

MATTBRAID

DIAMETER: 6-16mm
12 STRAND POLYESTER | 24 PLAIT POLYESTER COVER
APPLICATION : SHEETS CONTROL LINE TAILS

DIAMETER (mm)	6	8	10	12	14	16
BREAK STRAIN (kg)	600	1120	1980	2810	3300	5430
WEIGHT (KG/100m)	2.80	5.00	7.00	9.90	12.6	17.8

Soft, flexible and easy on the hands, Mattbraid uses the same braid-on-braid construction as Doublebraid, but with the addition of a soft, spun polyester cover. Great feel and grip in the hands, especially when wet, Mattbraid is the ideal sheet for cruising applications where comfort is key.

PS12

DIAMETER: 4-6mm
12 STRAND PRE-STRETCHED POLYESTER
APPLICATION : ACCESSORIES

DIAMETER (mm)	4	5	6
BREAK LOAD (kg)	678	1060	1331
WEIGHT (kg/100m)	1.19	1.91	2.47

12 strand polyester can easily be spliced for halyard tails and lazy jacks.

EXCEL *DINGHY SERIES*

RYA Team GBR relies on the highest performance equipment, and rope is no exception. Marlow's Excel Series doesn't disappoint, offering innovative solutions to every application, allowing the sailors to perform without compromise.
Steven Park, RYA Team GBR Manager

"excel [ik'sel], verb – to surpass all others, to be superior (to others) or outstandingly good"

Marlow were the first manufacturer to produce a coordinated and complementary range of ropes specifically designed for dinghy's and sports boats. Far from being the little brother to yacht racers, at Marlow we understand that not only does dinghy sailing offer up some of the most exciting and closest racing, it is also the proving grounds for the next generation of grand prix racing superstars.

There can be no better endorsement than being the official rope supplier to the multi-gold medal winning Skandia Team GBR, and the rope of choice of countless other international and national class champions.

The Excel range is constantly updated with new products, improved specifications and the latest colours. Imitated by many, matched by none, the Excel Dinghy Series, developed in conjunction with the world's best sailors will help ensure success at every level of dinghy sailing.

EXCEL *SPONSORED SAILORS / TEAMS*

BRITISH SAILING TEAM - OFFICIAL SUPPLIER

Marlow Ropes is the official supplier and exclusive team ropes partner to the British Sailing Team GBR, thanks to our industry-renowned reputation for producing innovative, race-winning products.

Marlow have been a supporter of the team for a number of years, supporting individual sailors directly as well as working with the team as a whole. Marlow and the British Sailing Team work closely together on rope technology development to ensure the best performing products on board the boats.

The team's successes in recent Olympic Games are well documented and Great Britain head the all time gold medal table in sailing events by quite some margin. We are extremely proud to have been associated with such a successful team for so long and in some small way to have helped with those successes.

The Marlow Ropes Award was introduced in 2002 with the aim of rewarding Britain's most promising young sailors for their determination, focus and talent. The Marlow award entitles the pair to free Marlow rope for a year, which winners say is invaluable as they launch themselves into the new Olympic cycle.

TEAM MOORE / HENKEN – US 49ER SAILORS

Team Moore/Henken recently joined forces with Marlow fresh off a solid performance at the 49er worlds, especially for a new team. They also competed in Kiel Week where they finished 15th.

Trevor teamed up with Hans after competing in the 2012 Olympics for the USA. Originally sailing optimists out of Naples Florida, he is the 2007 college sailor of the year, three time all American and two time colligate national champion

Hans, who attends Stanford University, California is a perfect match for past Olympian Trevor. Prior to 49ers Hans sailed the 29er for several years and has two top 16, finishes at worlds crewing and 3rd at youth worlds and is considered one of the tope US recruits.

In the upcoming year Moore/Henken will be training in Miami Florida with their Finnish training partners. With events in Miami, Palma de Mallorca, Hyeres and San Francisco in 2014, this new team will certainly be a top contender in the 49er fleet.

This is an exciting new partnership for team Marlow and we look forward to team Moore/Henken climbing the leader board and being great ambassadors for our company.

ICSA - INTER-COLLEGIATE SAILING ASSOCIATION

The Inter-Collegiate Sailing Association (ICSA) is the governing authority for sailing competition at colleges and universities throughout the United States and in some parts of Canada.

College sailing began on an informal, club basis in the 1890's, and organized racing started in 1928. It has grown to include more than 230 active colleges, and racing now occurs on every weekend during fall and spring seasons and on many weekends during the winter. It is a truly coeducational sport, and it has proved itself the best incubator for the development of racing skills. Former college sailors have always numbered significantly among Olympic medalists and America's Cup competitors.

Marlow Ropes are delighted to once again join the ICSA as an official supplier as well as once again helping to develop young talent by supporting the ICSA Young Sailor of the year award.

TEAM FLETCHER / SIGN – GBR 49ER SAILORS

"We soon learnt on the 49er that we needed very high performance ropes due to the high loads and speed through blocks. After a short while we started to use Marlow and have never looked back since. They have always pushed the boundaries utilising the latest in rope technology helping us to perform at the highest level" – Dylan Fletcher

Dylan and Alain have been sailing together since 2006 and progressed well in the 49er class. They are currently pushing towards selection for the 2016 Rio Games after narrowly missing out in 2012.

They achieved 1st in 2013 Hyeres World Cup, 1st in the UK National Ranker, 2nd in Sail for Gold and 2nd in the European Championships. They also secured a very creditable 4th in the World championships. Dylan and Alain are starts of the future and we are proud to be supporting their talent.

Both Dylan and Alain are self confessed rope addicts and always have feedback and ideas about new lines, acting as liason with the rest of the British Sailing Team to combine ideas and give feedback to our technical department.

FÉDÉRATION FRANÇAISE DE VOILE (FFV)

Marlow Ropes sont fournisseurs officiels de la FFV et avaient fourni l'équipe pour les 10 dernières années. L'équipe est livré avec une corde de classe mondiale pour y faciliter la formation et la performance à l'approche des Jeux olympiques.

Deux fois par an Marlow, remet un prix à la étoiles montantes de l'équipe. En leur donnant un coup de pouce dont ils ont besoin pour le faire passer au niveau suivant.

"L'Equipe de France de Voile ne laisse jamais rien au hasard, dans sa quête d'excellence aux Jeux Olympiques. C'est pourquoi après plus de 10 années de collaboration, l'Equipe de France a fait le choix de renouveler sa confiance à Marlow pour la haute technicité et fiabilité de ses cordages."
GUILLAUME CHIELLINO (DIRECTEUR EQUIPE DE FRANCE)

Marlow Ropes are official suppliers to the FFV and have been supplying the team for the past 10 years. The team is supplied with world-class rope to aid there training and performance in the lead up to the Olympics.

Twice a year Marlow presents an award to the up and coming stars of the team. Giving them a boost they need to make it to the next level.

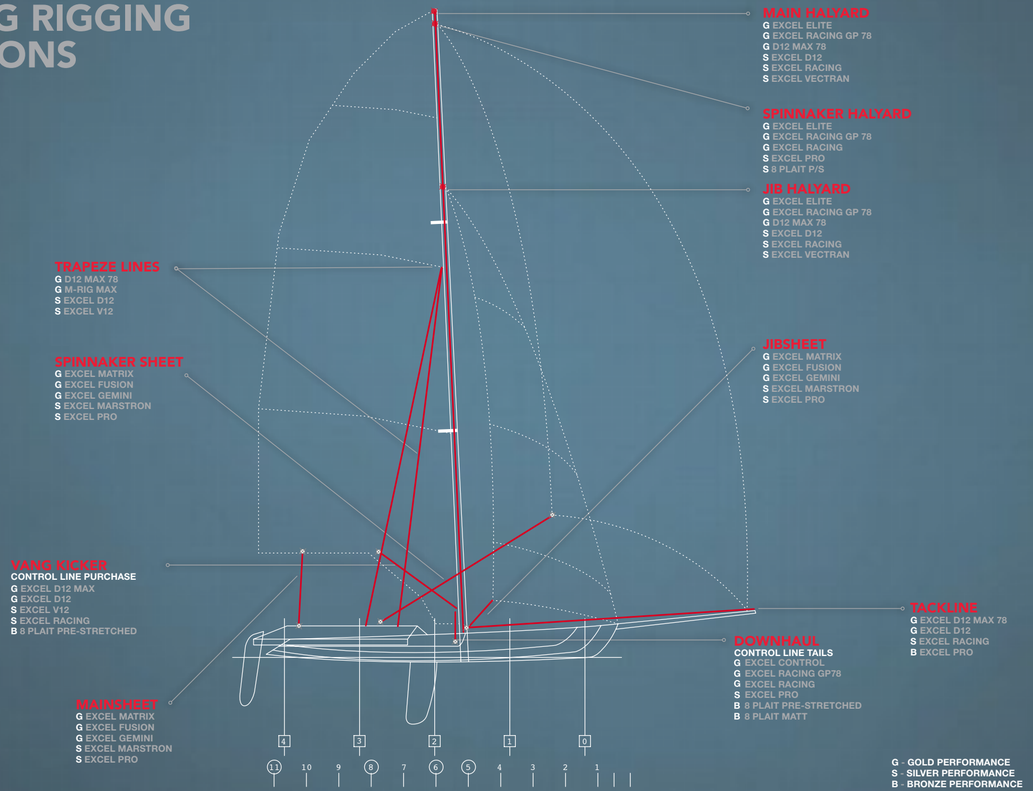
"The French sailing Team never leave anything to chance in their quest for excellence at the Olympics. This is the reason why the French Sailing Team chose to renew confidence in Marlow after more than 10 years of partnership for the innovation and reliability of their ropes."
GUILLAUME CHIELLINO (DIRECTOR OF THE FRENCH SAILING TEAM)

ICSA Inter-Collegiate Sailing Association of North America

BRITISH SAILING TEAM RYA Official Supplier

FFVoile

RUNNING RIGGING DEFINITIONS

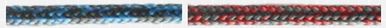


G - GOLD PERFORMANCE
S - SILVER PERFORMANCE
B - BRONZE PERFORMANCE

EXCEL DINGHY *SERIES*

EXCEL ELITE

Technora



DIAMETER: 4-6mm

12 STRAND SK99 COLOUR-MATCHED CORE | 16 & 24 PLAIT TECHNORA / POLYESTER BLENDED COVER

APPLICATION : HALYARDS | SPINNAKER HALYARDS

DIAMETER (mm)	4	5	6
BREAK LOAD (kg)	1356	16.56	2375
WEIGHT (kg/100m)	1.27	1.95	2.75

Why use Excel Elite? Incremental gain. Every advantage, however small adds to overall success. Upgraded Dyneema SK99 core gives exceptional strength and Technora blend cover ensures outstanding abrasion and heat resistance. With outstanding performance in cleats, the Technora blended cover also helps grip with wet hands. Elite is easy to taper, reducing weight and showing off the colour matched ArmourCoat cores.

EXCEL RACING

DIAMETER: 1.5-6mm

12 STRAND SK78 COLOUR-MATCHED CORE | 16 & 24 PLAIT TECHNORA / POLYESTER BLENDED COVER

APPLICATION : HALYARDS | SPINNAKER HALYARDS | CONTROL LINE TAILS

DIAMETER (mm)	1.5	2	3	4	5	6
BREAK LOAD (kg)	139	224	463	995	1434	2056
WEIGHT (kg/100m)	0.17	0.29	0.58	1.24	1.84	2.41

High strength, lightweight with 100% polyester cover and Dyneema SK78 core for all round use on halyards, sheets and control lines. Easily tapered and holds well in cleats Excel Racing is a great all round rope ideal for stripped halyards and spin sheets due to its easily identifiable solid colour cover and colour matched ArmourCoat core. Great all round performance.

EXCEL FUSION

DIAMETER: 6-10mm

DYNEEMA® SK78 CORE | BLENDED DYNEEMA® & POLYPROPYLENE COVER

APPLICATION : SHEETS

DIAMETER (mm)	6	7	8	10
BREAK LOAD (kg)	1088	1333	1411	2472
WEIGHT (kg/100m)	1.70	2.20	3.00	4.40

Super light sheet is soft, flexible and does not absorb water. The blended Dyneema and Polypropylene cover provides great abrasion resistance through ratchets and cleats. The Dyneema core means that you experience no stretch and fantastic control through Fusion sheets

EXCEL RACING GP 78

Technora

DIAMETER: 4-6mm

12 STRAND SK78 COLOUR-MATCHED CORE | 16 & 24 PLAIT TECHNORA / POLYESTER BLENDED COVER

APPLICATION : HALYARDS | SPINNAKER HALYARDS | CONTROL LINE TAILS

DIAMETER (mm)	4	5	6
BREAK LOAD (kg)	995	1434	2056
WEIGHT (kg/100m)	1.12	1.95	2.72

SK78 core is high strength and minimal creep and the Technora blended cover gives the same fantastic abrasion and heat resistance properties as Excel Elite. Technora blend cover adds grip for wet hands, and is easy to taper, showing colour matched ArmourCoat core. Ideal for halyards, sheets and high strength control lines.

EXCEL MATRIX

DIAMETER: 6 & 7mm

12 STRAND DYNEEMA® SK78 CORE / 8 PLAIT BLENDED DYNEEMA® & POLYPROPYLENE COVER

APPLICATION : SHEETS

DIAMETER (mm)	6	7
BREAK LOAD (kg)	1768	1915
WEIGHT (kg/100m)	1.94	2.76

High performance dinghy sheet. Does not kink or absorb water and is easy to taper thanks to thicker Dyneema core and thinner cover. High grip, blended cover of Dyneema and Polypropylene means great performance through ratchets and cleats with high resistance to abrasion.

EXCEL GEMINI

DIAMETER: 7-9mm

TWIN DYNEEMA® SK78 CORES | BLENDED DYNEEMA® & POLYPROPYLENE COVER

APPLICATION : SHEETS

DIAMETER (mm)	7	9
BREAK LOAD (kg)	995	1434
WEIGHT (kg/100m)	2.31	3.43

All the advantages of Excel Fusion, but with the added bonus of a dual-core system for boats requiring split bridal sheets. The dual core is designed to ensure equal strength and stretch, but removes the need for splicing extra rope to make a second tail.

EXCEL DINGHY *SERIES*

EXCEL D12

DIAMETER: 2.5-7mm

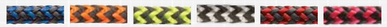
12 STRAND DYNEEMA® SK78 - ALSO AVAILABLE IN SK90 & SK99 FOR HIGHER STRENGTH

APPLICATION : CONTROL LINE PURCHASE

DIAMETER (mm)	2.5	3	4	5	6	7
BREAK LOAD (kg)	569	995	2056	2356	3487	5360
WEIGHT (kg/100m)	0.37	0.53	0.98	1.28	1.77	2.80

High Strength lightweight option with no water uptake for halyards secured on a rack or hook. Ideal wire replacement offering low friction around blocks. Available in multiple colours for easy line identification and easily spliced thanks to 12 strand single braid construction. Great for adjustable trapeze lines, vangs and purchase systems.

EXCEL CONTROL



DIAMETER: 4-5mm

TWISTED POLYPROPYLENE CORE | POLYESTER & TECHNORA® COVER

APPLICATION : CONTROL LINE TAILS

DIAMETER (mm)	4	5
BREAK LOAD (kg)	478	765
WEIGHT (kg/100m)	1.02	1.59

The first dedicated line for continuous loop control lines. Special snakeskin pattern means end-to-end, endless loop splicing with no diameter increase is much easier. Technora cover provides grip as well as heat and abrasion resistance. Distinctive colours aid easy identification. Use our wire splicing needle for best results (pg47).

EXCEL PRO

DIAMETER: 2-6mm

TWISTED POLYESTER CORE | 16 PLAIT POLYESTER COVER

APPLICATION : SPINNAKER HALYARDS SHEETS CONTROL LINE TAILS

DIAMETER (mm)	2	3	4	5	6
BREAK LOAD (kg)	97	202	377	702	986
WEIGHT (kg/100m)	110	0.6	1.07	2.15	2.68

Ideal for club racing and cruising. Low stretch, 100% polyester rope offers great performance at a lower cost. Brightly coloured cover for easy identification, which runs well through sheaths and blocks and sheaves. Good range of colours for all control lines on-board.

EXCEL D12 MAX 78

DIAMETER: 2.5-7mm

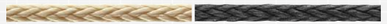
12 STRAND DYNEEMA® SK78 - ALSO AVAILABLE IN SK99 FOR HIGHER STRENGTH

APPLICATION : HALYARDS CNTRL LINE PURCH STND. RIGG & TRAP. LINES

DIAMETER (mm)	2.5	3	5	7
BREAK LOAD (kg)	1005	1507	3200	7510
WEIGHT (kg/100m)	0.45	0.68	1.56	3.56

Super light with no water uptake. The "Max' process adds strength and removes stretch. SK78 and SK99 have virtually no creep, so Excel D12 Max is a great light weight fibre option for standing rigging, removing weight from the rig. Almost zero creep and elongation at working loads. UV resistant.

EXCEL V12



DIAMETER: 2.5-6mm

12 STRAND VECTRAN | ARMOURCOAT

APPLICATION : HALYARDS SPINNAKER HALYARDS CONTROL LINE TAILS

DIAMETER (mm)	2.5	3	4	5	6
BREAK LOAD (kg)	627	993	1678	2405	3350
WEIGHT (kg/100m)	0.45	0.67	1.34	1.79	2.24

Easily spliced with zero creep ideal for lines under high load for extended periods.

EXCEL TAPER

DIAMETER: 6 & 9mm

MATT POLYESTER COVER | EXCEL RACING WITH DYNEEMA® SK78 CORE

APPLICATION : CONTROL LINE TAILS

DIAMETER (mm)	6	9
BREAK LOAD (kg)	995	2056
WEIGHT (kg/100m)	2.92	4.59

Ideal for tapered symmetric sheets, Excel Taper uses Excel Racing as its core and is covered with a soft mat polyester braid. The soft cover bulks up thinner Excel racing for those who want light high strength sheets, but prefer a thicker rope to hold on to. Easy on the hands and easily tapered thanks to the special construction cover and the 12 strand core of Excel Racing.

EXCEL DINGHY *SERIES*

EXCEL VECTRAN

DIAMETER: 1.5 - 4mm
VECTRAN® CORE | 16 PLAIT POLYESTER COVER

APPLICATION : HALYARDS

DIAMETER (mm)	1.5	2	3	4
BREAK LOAD (kg)	112	256	328	717
WEIGHT (kg/100m)	0.19	0.32	0.67	1.17

Vectran cored version of Excel Racing offers zero creep. Great for high load applications where zero elongation is required.

EXCEL MARSTRON

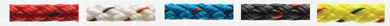
DIAMETER: 6-8mm
16 PLAIT POLYPROPYLENE COVER | POLYPROPYLENE CORE

APPLICATION : SHEETS CONTROL LINE TAILS

DIAMETER (mm)	6	8
BREAK LOAD (kg)	610	941
WEIGHT (kg/100m)	2.30	3.10

This lightweight sheet has super low water absorption and floats – excellent cruising spinnaker sheet.

8 PLAIT PRE-STRETCHED



DIAMETER: 4-8mm
TWISTED POLYESTER CORE | 8 PLAIT POLYESTER COVER | PRE-STRETCHED

APPLICATION : SPINN. HALYARDS CNTRL LINE PURCH CNTRL LINE TAILS

DIAMETER (mm)	4	5	6	8
BREAK LOAD (kg)	428	617	891	1413
WEIGHT (kg/100m)	1.30	2.10	2.90	5.50

Tried and tested option for cruising halyards and control lines. Knobbly 8 Plait construction provides good grip in the hands and in cleats and is great rope for control lines where grip and low stretch are needed. Great abrasion resistance makes this a firm favourite for many years.

EXCEL MARSTRON+

DIAMETER: 6-8mm
16 PLAIT DYNEEMA® & POLYPROPYLENE COVER I POLYPROPYLENE CORE

APPLICATION : SHEETS CONTROL LINE TAILS

DIAMETER (mm)	6	8
BREAK LOAD (kg)	610	941
WEIGHT (kg/100m)	2.30	2.93

The lightest weight sheet has low water absorption and floats. A lightly blended element of Dyneema in the cover improves abrasion resistance.

PS12

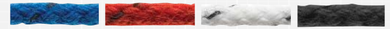
DIAMETER: 4-6mm
12 STRAND PRE-STRETCHED POLYESTER

APPLICATION : CONTROL LINE TAILS

DIAMETER (mm)	4	5	6
BREAK LOAD (kg)	687	1060	1331
WEIGHT (kg/100m)	1.19	1.91	2.47

12 strand polyester can easily be spliced for halyard tails and lazy jacks.

8 PLAIT MATT



DIAMETER: 4-10mm
TWISTED POLYESTER CORE | 8 PLAIT MATT POLYESTER

APPLICATION : SHEETS CONTROL LINE TAILS

DIAMETER (mm)	4	5	6	8	10
BREAK LOAD (kg)	293	415	550	889	1443
WEIGHT (kg/100m)	1.30	2.00	2.50	4.00	6.00

Soft matt cover makes this a great control line for those who prefer more grip and a softer feel.

EXTREME SPORTS *SERIES*

Pioneers in extreme sports, Marlow's 8 Plait Pre-stretched has been a staple for windsurf downhauls and outhauls for years thanks to it's low stretch and tough abrasion resistant cover.

Marlow developed and introduced Formuline, the first 100% Dyneema rope specifically designed for new high purchase downhaul systems. Imitated by many, Formuline remains the original and best and is now paired with Formula-X for ratchet downhaul systems.

Our windsurf lines are complemented by kite lines for both race and freestyle riding as well as Excel D12 which is ideal for leaders, chicken loops and pigtails.

EXTREME SPORTS

FORMULINE

DIAMETER: 3.8-4.5mm
12 STRAND TIGHTLY BRAIDED DYNEEMA® SK78 | 100m & 200m REELS

APPLICATION : OUTHAULS | DOWNHAULS

DIAMETER (mm)	3.8	4.5
BREAK LOAD (kg)	619	700
WEIGHT (kg/100m)	0.89	1.20

The first and still the best line specifically designed for use on windsurf downhauls and outhauls. High strength and great durability, Formuline is the perfect diameter to fit most rigs and won't let you down.

KITELINE RACE

DIAMETER: 1.4mm
12 STRAND DYNEEMA® SK90

APPLICATION : KITELINES

DIAMETER (mm)	1.4
BREAK LOAD (kg)	325
WEIGHT (kg/100m)	0.14

Kiteline Race offers great durability and strength even when lines are crossed.

EXCEL D12

DIAMETER: 2.5-7mm
12 STRAND DYNEEMA® SK78 - ALSO AVAILABLE IN SK90 & SK99 FOR HIGHER STRENGTH

APPLICATION : CONTROL LINE PURCHASE

DIAMETER (mm)	2.5	3	4	5	6	7
BREAK LOAD (kg)	569	995	2056	2356	3487	5360
WEIGHT (kg/100m)	0.37	0.53	0.98	1.28	1.77	2.80

Lightweight, high-stength Excel D12 can be used by windsurfers as auxiliary lines and lightweight harness lines and by kitesurfers for leader lines and depower lines

FORMULA-X

DIAMETER: 3.8mm
12 STRAND DYNEEMA® SK78
APPLICATION : WINDSURFER RATCHET DOWNHAULS

DIAMETER (mm)	3.8
BREAK LOAD (kg)	619
WEIGHT (kg/100m)	0.89

Formula-X was developed for windsurf downhaul ratchet systems. Textured surface grips in ratchets perfectly.

KITELINE FREESTYLE

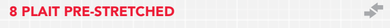
DIAMETER: 1.8mm
12 STRAND DYNEEMA® SK78

APPLICATION : KITELINES

DIAMETER (mm)	1.8
BREAK LOAD (kg)	450
WEIGHT (kg/100m)	0.24

Larger diameter adds safety factor for extreme freestyle and wave riding. Improved durability when lines are crossed. Low stretch line removes any need for further adjustment with new lines.

8 PLAIT PRE-STRETCHED



DIAMETER: 4-8mm
TWISTED POLYESTER CORE | 8 PLAIT POLYESTER COVER | PRE-STRETCHED

APPLICATION : SPINN. HALYARDS | CNTRL LINE PURCH | CNTRL LINE TAILS

DIAMETER (mm)	4	5	6	8
BREAK LOAD (kg)	428	617	891	1413
WEIGHT (kg/100m)	1.30	2.10	2.90	5.50

Polyester option for windsurf downhauls and outhauls, grips well in cleats and provides good abrasion resistance.

MOORING

Whilst mooring lines are often overlooked, they are equally as important as sheets and halyards – what is the value of the yacht they are securing to the dock?

Marlow manufacture a range of mooring lines to suit every craft, from our Superyacht Mooring lines detailed on Page 21, to our braided docklines and traditional 3 strand ropes. All have their own particular characteristics, but all are designed not only to ensure the security of a moored vessel, but also to enhance the dockside appearance.

Marlow Docklines are also available in pre-spliced to standard lengths.

CUSTOM DOCKLINES

Fore and Aft Spring lines stop forwards and backwards movement of the boat on its mooring.

SPRING LINES LENGTH = 3/4 X OVER ALL BOAT LENGTH

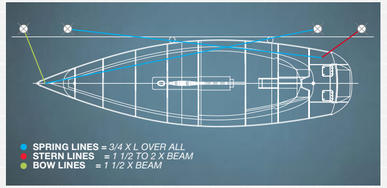
Stern lines stop the stern of the boat moving out, away from the dock

STERN LINE LENGTHS = 1 1/2 TO 2 X BEAM OF THE BOAT

Bow Lines stop the bow of the boat moving out, away from the dock

BOW LINE LENGTHS = 1 1/2 X BEAM OF THE BOAT

Always inspect your lines regularly for signs of wear. Nylon has excellent shock absorbing characteristics but areas vulnerable to chafe should be protected with a piece of rubber hose or leather.



ANCHOR LINES

Aim to use chain between the Anchor and the Line. This will help gain a good catenary angle and help dig it in, reducing the effect of pitching and tugging and protecting the line from the seabed abrasion.

Remember when selecting the size of line for an anchor warp, nylon is ideal at absorbing shock loads but it will have some strength reduction when wet.

Have enough line on board to provide scope for at least 7 x the max depth of water expected. In heavy weather when the boat is pitching and tugging, 10 x the depth of water may be needed.

MARINA GRANDE DOCKLINE

DIAMETER: 12-20mm

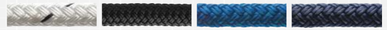
12 STRAND POLYESTER CORE | 24 PLAIT OPTI-TWIST COVER

APPLICATION : MOORING

DIAMETER (mm)	12	14	16	18	20
BREAK LOAD (kg)	2200	3300	4300	5600	6900
WEIGHT (kg/100m)	9.20	13.8	18.4	23.0	29.0

The All New Marina Grande has been engineered using our Opti-Twist yarn process as found in our Superyacht Mooring Lines. Opti-Twist provides outstanding abrasion and shock absorbing properties whilst being comfortable to handle and remaining supple, even after long exposure to water and the elements. This 100% polyester mooring rope will not suffer from shrinkage, strength loss or UV degradation like nylon ropes.

DOCKLINE



DIAMETER: 12-20mm

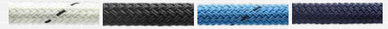
TWISTED POLYPROPYLENE CORE | POLYESTER & TECHNORA ® COVER

APPLICATION : MOORING

DIAMETER (mm)	12	14	16	18	20
BREAK LOAD (kg)	4150	6250	7600	9050	10650
WEIGHT (kg/100m)	7.91	12.7	16.6	21.0	24.8

Extremely soft of the hands, Dockline now has a polyester core and cover, meaning issues from shrinkage and strength loss are eliminated. Thanks to its construction, Dockline is easy to splice, exhibits good shock absorbing properties and remains soft and flexible at all times.

PRE SPLICED DOCKLINES



DIAMETER: 12-20mm

MARLOW DOCKLINE WITH 50CM FACTORY SPLICED EYE. WHIPPED OTHER END

APPLICATION : MOORING

DIAMETER (mm)	12	12	14	14	16	16	16
LENGTH (kg)	6	8	8	10	10	12	15

Our factory-spliced docklines have a 50cm spliced eye protected with polyester tubular webbing. Whipped at the other end and supplied in a neat reusable bag, Pre-Spliced Docklines are available in a range of standard lengths and diameters.

3 STRAND PRE-STRETCHED

DIAMETER: 3-12mm
3 STRAND POLYESTER | PRE-STRETCHED | 100m & 200m REELS
APPLICATION : **MOORING**

DIAMETER (mm)	3	4	5	6	8	10	12
BREAK LOAD(kg)	319	583	1034	1694	2178	2640	3344
WEIGHT (kg/100m)	0.98	1.61	2.07	3.06	4.81	8.23	10.7

Strong, tough and low stretch, 3 Strand Pre-Stretched is easily spliced to wire and is a great traditional halyard. In addition, it's hardwearing construction makes it a great low stretch, tough all-round rope.

3 STRAND POLYESTER

DIAMETER: 4-32mm
3 STRAND POLYESTER | 100m & 200m REELS, 220m COILS
APPLICATION : **MOORING**

DIAMETER	4	6	8	10	12	14	16	18	20	24	28	32
BREAK LOAD	529	951	1465	2570	3170	3930	4766	6600	9230	11210	14640	18840
W (kg/100m)	1.21	2.73	4.80	7.85	10.9	14.9	19.4	24.6	30.3	46.0	62.8	82.0

The classic mooring line, Marlow's 3 Strand is manufactured using the highest quality materials to produce a rope of the highest quality with the perfect flexibility and firmness. Polyester wont degrade in UV and remains supple and strong even when wet.

MULTIPLAIT NYLON

DIAMETER: 8-32mm
8 STRAND NYLON | 100M & 200m REELS
APPLICATION : **MOORING**

DIAMETER	12	14	16	18	20	24	28	32
BREAK LOAD	1030	1470	2020	2870	3330	4470	5940	23930
WEIGHT (kg/100m)	4.50	6.20	8.10	11.7	14.0	19.4	26.3	66.4

The classic anchor line, Multiplait has fantastic shock absorbing characteristics when anchoring in rough seas and is easily spliced to chain thanks to its 8 strand construction and special markers. Its soft flexible, unkinkable construction makes it perfect for easy stowage, whilst still maintaining excellent grip on the windlass.

3 STRAND BUFF POLYESTER PRE-STRETCHED

DIAMETER: 8-16mm
16 PLAIT DYNEEMA ® & POLYPROPYLENE COVER I POLYPROPYLENE CORE
APPLICATION : **MOORING**

DIAMETER (mm)	8	10	12	14	16
BREAK LOAD (kg)	1800	2750	3350	4200	5700
WEIGHT (kg/100m)	4.60	9.09	10.0	15.5	17.3

Same great benefits as the standard 3 Strand Pre-Stretched, but in a buff colour for a traditional "Natural Fibre" look.

HARDY HEMP

DIAMETER: 6-24mm
3 STRAND POLYPROPYLENE | 100m & 200m REELS
APPLICATION : **MOORING**

DIAMETER (mm)	6	8	10	12	14	16	18	20	24
BREAK LOAD (kg)	390	640	1030	1470	2020	2870	3330	4470	5940
WEIGHT (kg/100m)	1.50	2.80	4.50	6.20	8.10	11.7	14.0	19.4	26.3

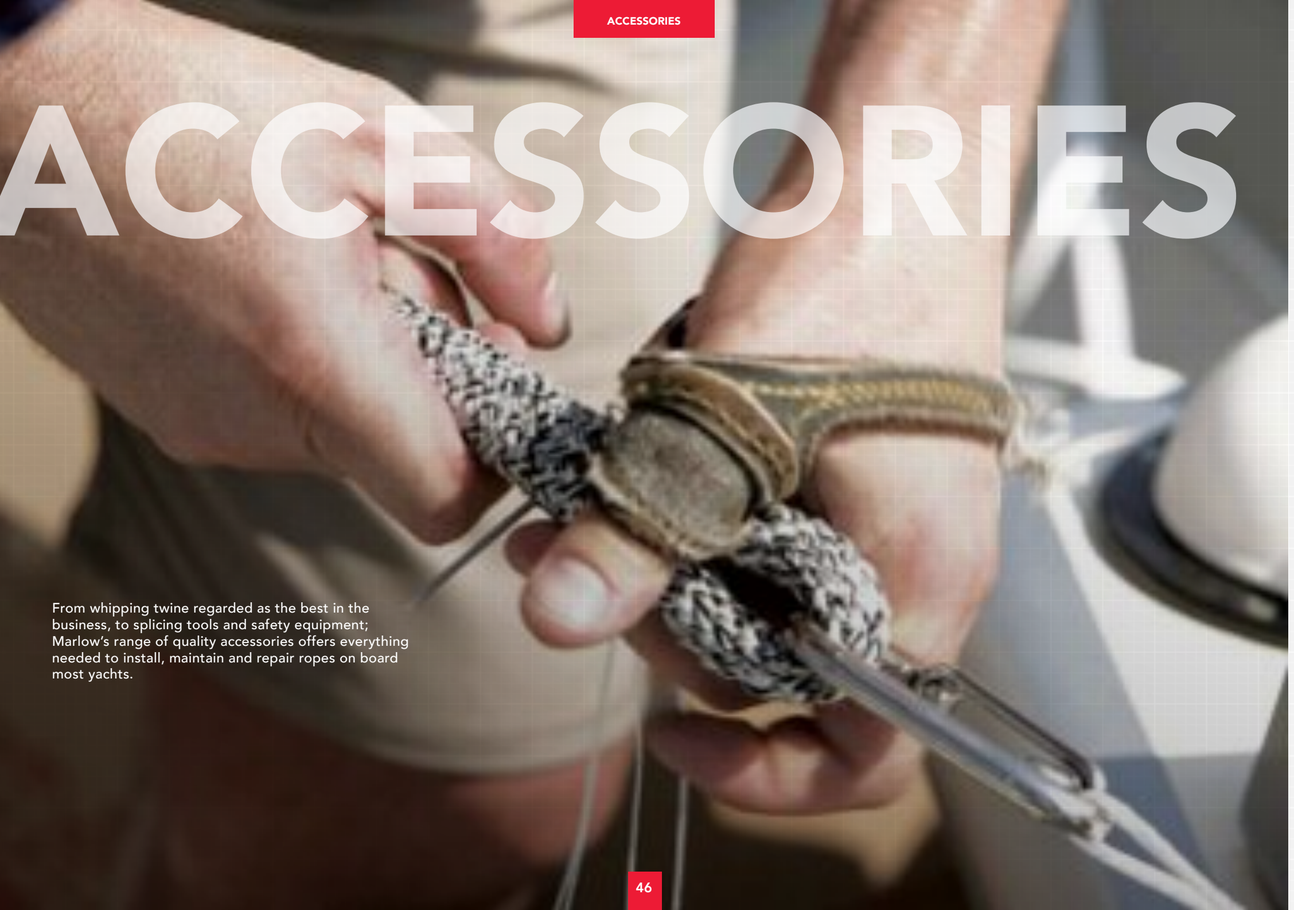
Soft handling and a "hairy look and feel" mean this rope has the authentic look of natural fibre. However, being made from polypropylene, Hardy Hemp gives all the aesthetic qualities of natural fibre but with the benefits of modern technology – floats, non-rot, UV resistant.

3 STRAND NELSON

DIAMETER: 4-10mm
3 STRAND POLYPROPYLENE | 100m & 200m REELS
APPLICATION : **MOORING**

DIAMETER	6	8	10	12	14	16	18	20	24	28	32
BREAK LOAD	648	1145	1685	2387	3294	4072	5195	6264	8770	11556	14537
W (kg/100m)	1.70	3.00	4.50	6.50	9.00	11.5	14.8	18.0	18.0	35.5	46.0

A tough, no nonsense 3 strand rope manufactured using staple polypropylene fibres. High grip, abrasion resistance and lightweight, Nelson makes a great easily spliced general purpose rope.



ACCESSORIES

From whipping twine regarded as the best in the business, to splicing tools and safety equipment; Marlow's range of quality accessories offers everything needed to install, maintain and repair ropes on board most yachts.

SPLICING TOOLS

SWEDISH FIDS

Traditional steel splicing fids with a wooden handle, Swedish Fids are used for Multiplait, 3 strand and Marlowbraid splicing (in conjunction with the riggers splicing needle).

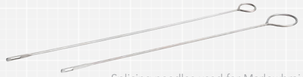
BRAID-ON-BRAD FID SET

The best option for splicing Braid-on-Braid, this fid set includes 4mm fid up to 12mm fid. Also used for D12 (12 strand) splices and can be used for 3 strand lines also.

SPLICING KIT

Starter splicing kit includes small and large splicing needles, small Swedish Fid, whipping twine, Marlow tape and splicing instructions – perfect for the novice.

RIGGERS SPLICING NEEDLES



Splicing needles used for Marlowbraid (Quick Splice), D2 (Covered Dyneema Splice) and can be used on D12 (12 Strand Dyneema Splice).

EXCEL SPLICING NEEDLE

Multipurpose splicing needle for very small diameter dinghy ropes such as Excel Control, Excel Racing and Excel D12. Also great for tapering Fusion and Matrix.

SAILMAKERS NEEDLES

High quality, traditional sailmakers needles in a mixed pack offering different sizes and shapes.

SAILMAKERS PALM

Tough leather palm with added protection over the ball of the thumb allowing stitching and whipping of even the toughest ropes.

WHIPPING TWINE

NO.2 NO. 4 NO. 8 NO.16

SIZE	No. 2 (Thin)	No.4 (Med.)	No.4 (Med.)	No.4 (Med.)	No.4 (Med.)	No.4 (Med.)	No.4 (Med.)	No.4 (Med.)	No.4 (Large)	No.16 (Large)
COLOUR	white	white	red	blue	black	green	gold	beige	white	white
WEIGHT (mm)	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.1	1.5

Widely regarded as the best whipping twine on the market, the polyester whipping twine is available in 4 sizes and a variety of colours (No.4 only). The waxed finish makes for easier whipping and a better finish. Available in "Display Boxes" of 12 spools or on 1kg cops.

YACHTSMAN'S SPLICING ROLL

This tough roll up tool bag includes small and large Swedish Fids and small and larger riggers splicing needles along with Marlow Tape, whipping twine and a marker pen. The splicing roll has additional pockets for the budding splicer to expand their splicing tool collection with Braid-on-braid splicing fids, scissors, sailmakers needles and a splicing knife

EXTRA POWER TEFLON SCISSORS

Tough Teflon coated scissors especially chosen for their ability to cut Dyneema. These scissors are used by our factory splicers.

MARLOW TAPE

Marlow branded tape for splicing and finishing of ropes.

MARLINE

Marlow's traditional tarred waterproof hemp twine comes in two sizes – large and small. Use for whipping wire splices, mooring posts, heavy duty static mooring lines etc.

ACCESSORIES

SHOCKCORD

DIAMETER: 3-10MM

POLYESTER COVER | RUBBER CORES

First quality, high elasticity, natural rubber provides a minimum 100% stretch with constant elongation characteristics. Polyester cover is tough and UV resistant offering good abrasion resistance and a great range of standard colours.

8 PLAIT MARSTRON

DIAMETER: 6-10mm

8 PLAIT POLYPROPYLENE COVER | POLYPROPYLENE CORE | 100M & 200M REELS

APPLICATION : THROW LINES AND PAINTERS

DIAMETER (mm)	6	8	10
BREAK LOAD (kg)	488	645	1242
WEIGHT (kg/100m)	1.76	2.70	6.00

Lightweight, High Visibility floating line. Soft and easily handled, 8 Plait Marstron is ideal for rescue throw lines, tow ropes and painters.

8 PLAIT STANDARD

DIAMETER: 1.5-4mm

8 PLAIT POLYESTER

DIAMETER (mm)	1.5	2	3	4
BREAK LOAD (kg)	90	130	210	359
WEIGHT (kg/100m)	0.25	0.33	0.70	1.16

100% polyester line for flag halyards and burgees. Also used as leach lines, and whipping large diameter ropes as well as decorative lashings.

GUARD RAIL NETTING

Knotted white nylon netting. Handy Tip – measure the distance the netting needs to run fore and aft and allow an additional 25%. This allows for take up in the length caused by the drop on standard stanchions (61cm / 24").

WEBBING

TYPE	MATERIAL	WIDTH	REEL LENGTH	BREAK LOAD	COLOUR
TOE STRAP	Polyester	50mm	50m	1800kg	red / blue / black
BUOYANCY BAG	Polyester	37mm	100m	750kg	white
JACKSTAY	Polyester	25mm	50m	3000	blue

Selection of towstrap, buoyancy bag and jackstay webbing.

BUOYANCY BAG WEBBING

31mm wide Nylon webbing available in white. Light weight and ideal for lighter webbing duties.

TOE STRAP WEBBING

50mm wide polyester webbing available in 3 strong colours. Tough, strong and low stretch webbing for Toe Straps on dinghy's and sports boats.

JACK STAY

Tough 25mm wide polyester webbing offers a 3 tonne break load and is perfect for those heavy duty jobs.

D12 SOFT SHACKLES

Factory spliced D12 Soft Shackles offer outstanding strength at a fraction of the weight of conventional steel shackles.

DIAMETER (mm)	4	5	6	7	9	11
BREAK LOAD	2364	2709	4010	6146	7981	13331
WEIGHT (g)	9.80	12.8	17.7	28.0	37.6	58.2

RACKING

HAND HELD HOT KNIFE

AVAILABLE IN 240V AND 110V

Marlow hot knife for cutting and heat-sealing ropes in one stroke. Use in conjunction with Marlow Tape for a perfect finish. Supplied in a handy carry case with a metal bristled cleaning brush.

SPARE BLADE FOR HOT KNIFE

MINISPOOLS

Excel Racing and Excel Pro available on handy 30m (2mm) and 17m (3mm) spools. Display on euro slot cards or stack on the counter for impulse buy.

POINT OF SALE RACKING

Supplied to Marlow Dealers directly or through distributors, the striking Marlow rope rack sets our products apart from the crowd with its freestanding design and integrated lightbox.

The racking includes label facia which can be customised to the specific ropes displayed on the rack with labels downloadable from the dealer section of our website.

As well as clearly labeling the ropes on the rack, the labels are colour coordinated with both this brochure and our pocket retail guide to help customers chose the correct rope for each application.

LEAFLET HOLDERS & WINDOW STICKERS

To assist retail customers in specifying and buying the correct rope are our Pocket Rope Guides. All products are listed and colour coded by application with a "non-technical" description of how and why each rope helps the sailor.

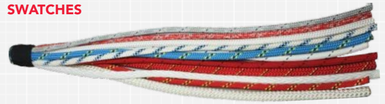
The guide combines with the colour coded Marlow rope rack labels in store, to help ensure the customer finds and buys the rope they want.

The Pocket Rope Guide also has a useful line selection guide and a rope strength comparison table.

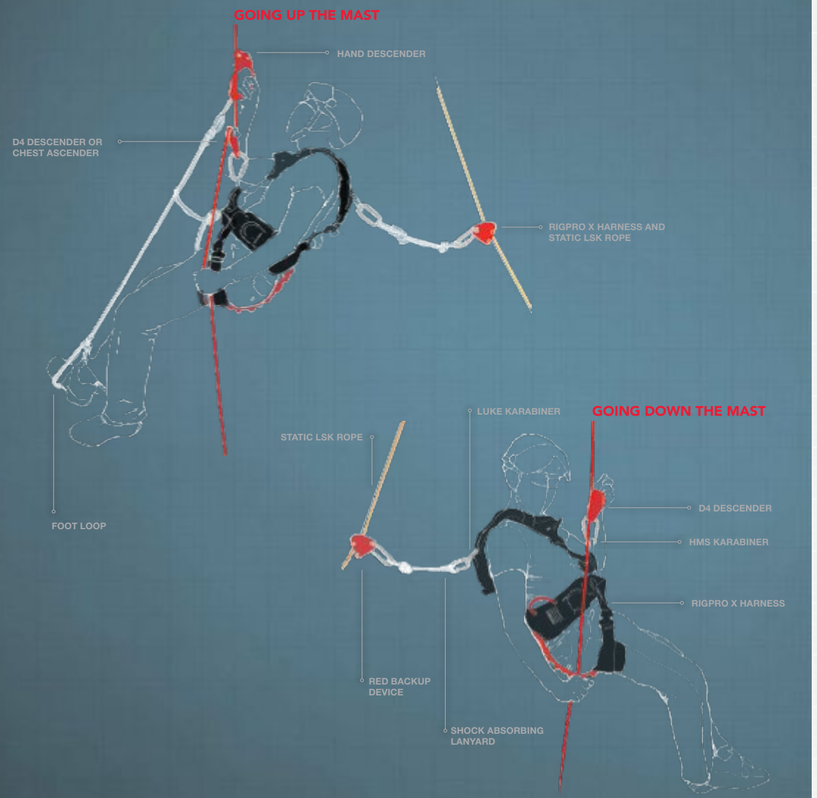
Also available to retailers are Point Of Sale and promotional items such as stickers, posters, rope-measuring callipers and plastic bags.

All of our Brochures, Pocket Guides and Point Of Sales material are available to Marlow retailers Free Of Charge.

SWATCHES



Samples of all ropes grouped by our different "Series". Ideal for showing customers different products and explaining the differences.



MAST CLIMBING

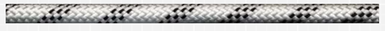
MARLOW SAFETY AT HEIGHT

Climbing the rig to check its integrity or to make repairs can be a dangerous job, so we are glad to be able to use our experience gained in the Professional Rope Access market to provide a comprehensive rage of safety at height equipment for yacht riggers.

The equipment listed here includes everything necessary to undertake a safe ascent, effect a comfortable work positioning and return to the deck safely, whether the climber is assisted or working alone. This includes:

11MM STATIC LSK ROPE

SPECIALIST SAFETY AT HEIGHT ROPE WITH HIGH ELONGATION, AVAILABLE IN VARIOUS COLOURS TO DIFFERENTIATE WORKING ROPE AND BACK-UP ROPE



Construction: Twisted Polyamide (Nylon) core / 16 plait Polyamide (Nylon) cover
Lengths: 50m, 60m, 100m
Colours: White with Black or Red flecks. 9mm (Cross Fleck), 10.5mm (Double Fleck), 11mm (Triple Fleck), 12mm (Four Fleck)
11mm & 12mm available in solid colours also
Applications: Abseiling, Work positioning, Industrial rope access
Benefits: AquaCoat water repellent coating on request. Flexibility & Suppleness, Abrasion resistance. Outstanding dynamic properties, Visible Year of Manufacture Marker
Lengths: 100m, 200m

DIAMETER (mm)	10.5	11	12
ROPE CLASSIFICATION (TYPE)	A	A	A
MASS 9g/m	67.2	73.8	90.3
50-150KG ELONGATION (%)	2.0	2.4	1.9
FALL FACTOR 1 FALLS (FIG 8 LOOP)	10+	10+	10+
PEAK FORCE FIG 8 LOOP (KN)	5.6	5.8	5.5
AV. STATIC STRENGTH FIG 8 LOOP (KN)	19.5	21.1	24.3
CE STANDARD	EN1891	EN1891	EN1891

Specialist safety at height rope with high elongation, available in various colours to differentiate working rope and back-up rope.

RIGPRO X HARNESS

FOR SAFE ASCENTS AND COMFORTABLE WORKING AT HEIGHT FOR EXTENDED PERIODS

The RigPro is a riggers' five-point fall arrest safety harness and has been designed for comprehensive comfort, protection and safety and is ideal for rigging, abseil and specialist work. Designed to support the body and distribute the forces in suspended work and to prevent serious injury and keep the wearer in a safe position for rescue, in fall arrest.

The RigPro has been designed to help lower the compression forces around the user's back, hips and legs and using built up layers of thermoformed breathable foams and a clever combination of fabrics reduces the pinching of webbing against the skin. RigPro's extra padding protects the wearers hips from fittings which tend to become uncomfortable after long work periods. RigPro X adds attachment points for chest ascender.

PRINCIPAL FEATURES:

- Rear 'D' attachment point
- Front sternum attachment
- Lower ventral for abseil
- Two side work positioning 'D's, Belt loops
- Easy to don via click lock buckle entry
- Easy fit, with side and shoulder adjustment cam buckles
- Ultra lightweight Carbon steel fittings, black powder coated
- Contrast colour stitch for easy inspection
- Water repellent and UV resistant polyester webbing
- Padded leg loops and shoulder yoke
- 150kg rated

STANDARDS:
EN 361 EN 358 EN 813 AS/NZS 1891

CHEST ASCENDER

ATTACHES TO HARNESS AND USED IN CONJUNCTION WITH HAND ASCENDER WHEN SOLO CLIMBING

WEIGHT	164g
BODY MATERIAL	Aluminium
CAM MATERIAL	Stainless Steel
CE STANDARD	EN567

FOOT LOOP

USED IN CONJUNCTION WITH HAND ASCENDER WHEN SOLO CLIMBING

HAND ASCENDER

USED IN IN CONJUNCTION WITH FOOT LOOP AND CHEST ASCENDER FOR SOLO CLIMBING TECHNIQUES

WEIGHT	350g
ROPE DIAMETER	9-13mm
BODY MATERIAL	Aluminium
RATED CAPACITY	Dependant on rope type
CE STANDARD	EN56, NEPA Conmpliant

DESCENDER

USED TO LOWER THE CLIMBER IN A CONTROLLED AND SAFE MANNER, WHETHER WORKING SOLO OR EVEN IN A RESCUE SITUATION.

The D4 cam is made from solid Stainless Steel and is very wear and corrosion resistant. The device has an in-built wear indicator. The D4 Descender cams are replaceable (by competent trained personnel), potentially giving the D4 a longer in-use life.

WEIGHT	655g
RATED LOAD	240kg
ROPE	10.5 - 11.5mm
CE STANDARD	EN12841, NFPA, ANSI

BACK UP DEVICE

USED TO ATTACH CLIMBER TO BACK UP ROPE IF MAIN ROPE SYSTEM FAILS. RATED FOR TWO PEOPLE IN A RESCUE SITUATION

The RED Back up device has non-aggressive cams and is self parking allowing it to be positioned correctly when working. The rotational braking ensures that in the event of a gear failure or sudden drop, the climber is does not fall.

WEIGHT (g)	202
RATED CAPACITY	240
ROPE DIAMETER	10.5-12.7mm
BODY MATERIAL	Aluminium
CAM MATERIAL	Aluminium
CE STANDARD	EN12841A
TOW CORD	Standard or Popper

COW'S TAIL LANYARD

USED TO CONNECT HAND ASCENDER TO HARNESS

10.5mm & 11mm Marlow Dynamic 4m & 5m cut lengths

CE STANDARD: EN892

SHOCK ABSORBING LANYARD

USED IN CONJUNCTION WITH BACK UP DEVICE TO REDUCE IMPACT FORCE IF MAIN ROPE FAILS AND BACK UP IS ENGAGED

Traditional tear webbing design. Easy to inspect after a fall with peak loads reaching 4kN. Min length 0.5m; Max 2m.

10.5mm & 11mm Marlow Dynamic 4m & 5m cut lengths

CE STANDARD: EN892

KARABINERS

VARIOUS LIGHTWEIGHT ALLOY KARABINERS TYPES, USED FOR EQUIPMENT CONNECTION

All Aluminium Karabiners meet CE EN 362 and are available in screw-gate and 2, 3 or 4-way gates.

HMS

WEIGHT (G)	93
GATE OPENING GAP (MM)	22
BODY MATERIAL	Aluminium
FINISH	Anodised
COLOUR	grey
(MBS) MINIMUM BREAKING STRAIN (KN)	27

GATOR

WEIGHT (G)	46
GATE OPENING GAP (MM)	15
BODY MATERIAL	Aluminium
FINISH	Anodised
COLOUR	grey
(MBS) MINIMUM BREAKING STRAIN (KN)	25

LUKE

WEIGHT (G)	85
GATE OPENING GAP (MM)	20
BODY MATERIAL	Aluminium
FINISH	Anodised
COLOUR	grey
(MBS) MINIMUM BREAKING STRAIN (KN)	25

USEFUL INFORMATION

FULL WEIGHT & BREAK COMPARISON TABLE

Diameter (mm)	3		4		5		6		7		8		9		10		11		12		13		14		15		16		18		20	
D2 GRAND PRIX 78											3487	3.90			5360	5.92			6940	9.29												
D2 RACING 78											3487	3.90			5360	5.92			6940	9.29			9274	11.7			11592	14.7	14919	18.5		
D12	995	0.53	2056	0.98	2356	1.28	3487	1.77	5360	2.80			6940	3.76	9274	4.83	11592	5.82			14919	8.00			18418	9.80						
V2 RACING											3350	4.89			5750	6.65			8680	10.7			10980	13.4			11950	17.1	14700	22.1		
D2 COMPETITION 78											2056	4.83			3487	7.63			5360	9.71												
DOUBLEBRAID							1390	2.84			2560	4.80			3690	7.47			4760	11.1			6050	15.6			7230	19.3	7910	23.2		
MARLOWBRAID							986	2.68			1577	4.45			2850	7.30			4450	10.0			5460	14.5			7420	19.0	10190	23.5	11340	28.5
MATTBRAID							600	2.80			1120	5.00			1980	7.00			2810	9.90			3300	12.6			5430	17.8				
3 STRAND PRE-STRETCHED	319	0.98	583	1.61	1034	2.07	1694	3.06			2178	4.81			2640	8.23			3344	10.66												
PRODRIVE									2635	5.20			4391	8.10			6560	11.6			7822	15.2			13120	25.0						
M-RIG MAX	1353	0.68	2224	1.11	2874	1.56	4107	2.23	6744	3.56	8430	4.45	9694	5.40	11309	6.30	13568	7.55	16157	9.00	18989	10.7			23736	13.4						

Diameter (mm)	1.5		2		2.5		3		4		5		6		7		8		9		10	
EXCEL ELITE									1356	1.27	1656	1.95	2375	2.75								
EXCEL RACING GP 78									995	1.12	1434	1.95	2056	2.27								
EXCEL RACING	139	0.17	224	0.29			463	0.58	995	1.24	1434	1.84	2056	2.41								
EXCEL MATRIX													1768	1.94	1915	2.76						
EXCEL FUSION													1088	1.70	1333	2.20	1411	3.00	2472	4.40		
EXCEL GEMINI															995	2.31			1434	3.43		
EXCEL D12					569	0.37	995	0.53	2056	0.98	2356	1.28	3487	1.77								
EXCEL D12 MAX 78					1005	0.45	1507	0.68			3200	1.56			7510	3.56						
EXCEL V12					627	0.45	993	0.67	1678	1.34	2405	1.79	3350	2.24								
EXCEL PRO			97	0.27			202	0.60	377	1.07	702	2.15	986	2.68								
EXCEL CONTROL									478	1.02	765	1.59										
EXCEL TAPER													995	2.92					2056	4.59		
EXCEL VECTRAN	112	0.19	256	0.32			382	0.67	717	1.17												
EXCEL MARSTRON +													610	1.87			941	2.93				
EXCEL MARSTRON													610	2.30								
8 PLAIT PRE-STRETCHED									428	1.30	617	2.10	891	2.90			1413	5.50				
8 PLAIT MATT									293	1.30	415	2.00	550	2.50			889	4.00			1443	6.00

Diameter (mm)	1.4		1.8		3.8		4.5	
FORMULINE					619	0.89	700	1.20
FORMULA-X					619	0.89		
KITELINE RACE	317	0.14						
KITELINE FREEST.			450	0.24				

Diameter (mm)	4		5		6		8		10	
PS12	678	1.19	1060	1.91	1331	2.47				
8 PLAIT MARSTRON					460	1.76	770	2.70	1310	5.00

	1.5		2		3		4	
8 PLAIT ST.	90	0.25	130	0.33	210	0.70	359	1.16

Diameter (mm)	4		6		8		10		12		14		16		18		20		24		28		32	
MARINA GRANDE									2200	9.20	3300	13.8	4300	18.4	5600	23.0	6900	29.0						
DOCKLINE									4150	7.91	6250	12.74	7600	16.64	9050	20.97	10650	24.75						
3 STRAND POLYESTER	529	1.21	951	2.73	1465	4.80	2570	7.85	3170	10.9	3930	14.9	4766	19.4	6600	24.60	9230	30.3	11210	46.0	14640	62.8	18840	82.0
MULTIPLAIT NYLON					1900	4.20	2770	6.50	3800	9.40	4670	12.9	6640	16.6	7270	21.0	9890	26.0	14370	37.3	18550	51.0	23930	66.4
3 STRAND BUFF POLYESTER PRE-STRETCHED					1800	4.60	2750	9.09	3350	10.0	4200	15.5	5700	17.3										
HARDY HEMP			390	1.50	640	2.80	1030	4.50	1470	6.20	2020	8.10	2870	11.7	3330	14.0	4470	19.4	5940	26.3				
3 STRAND NELSON			648	1.70	1145	3.00	1685	4.50	2387	6.50	3294	9.00	4072	11.5	5195	14.8	6264	18.0	8770	26.0	11556	35.5	14537	46.0

KEY: Average break Load (kg) / Mass (Kg/100m)

LINE SELECTION GUIDE

The guide below, details diameters per application for the average cruiser/racer based on polyester ropes such as Marlowbraid or Doublebraid.

From a performance perspective strength and stretch are most important and the higher strength to weight ratio of ropes with Dyneema means that at least one size smaller can be used e.g. An 8mm or 10mm D2 Racing can be used instead of 12mm Marlowbraid.

However, when choosing any line, it is important to achieve a balance between performance and the ability to handle the line effectively – if the rope is too thin, the crew may find it more difficult to hold on to and your existing deck gear may struggle to work with it.

OVERALL YACHT LENGTH (M)	6-8m	9m	10m	11m	12m	14m	16m	18m
SAIL AREA sq.ft. (approx)								
MAIN	8.5	13.5	16	18.5	23.5	37.5	50	67
GENOA/JIB	9	16.5	25	33.5	42	58.5	71	83.5
SPINNAKER	37.5	46	54.5	71	92	117	150.5	184
SHEET SIZE diameter (mm)								
MAIN	8	10	10	10	12	12	14	16
GENOA/JIB	8	10	10	12	12	14	16	18
SPINNAKER	8	8	8	10	10	12	14	16
SPINNAKER/GUY	8	8	10	10	12	14	16	18
HALYARD SIZE diameter (mm)								
MAIN	10	10	12	12	14	14	18	20
GENOA/JIB	10	10	12	12	14	14	18	20
SPINNAKER	8	8	10	10	12	12	14	16

Use one size down from the sizes detailed in this chart when specifying ropes with Dyneema® cores

MOORING ROPES	6-8m	9m	10m	11m	12m	14m	16m	18m
DISPLACEMENT TONNES	2	4	5	6.5	8	11	12	20
POLYESTER LINE (MM)	8-10	12	12	14	14	16	18	24

ANCHORS WARPS, PAINTER LINES	6-8m	9m	10m	11m	12m	14m	16m	18m
DISPLACEMENT TONNES	2	4	5	6.5	8	11	12	20
NYLON LINE (MM)	12	14	16	16	18	20	20	24

ROPE CARE & STORAGE

Marlow products are an investment and should be looked after accordingly. They are designed and manufactured to an exceedingly high standard and Marlow know how each can be expected to perform and last under varying conditions. The guidelines listed will help you maintain your ropes in terms of their durability, performance, and reliability.

GENERAL GOOD PRACTICE:
- Inspection all ropes regularly to establish their condition.
- Ensure the rope's suitability for it's intended use.

CHECK FOR:
- Chaffing or seriously worn surface areas
- Kinks/twists in the rope
- Movement in splices and joins
- Broken, cut or frayed strands
- Compacted or hardened areas
- Surface friction burns or melted sections
- Chemical exposure and degradation
- UV degradation

Should you be in any doubt about the true condition of the rope and its suitability for continued use, consult your nearest Marlow approved rigging specialist.

IN ADDITION:
- The coiling and uncoiling of a rope is the first step to ensure that your rope is not damaged - never allow the rope to become kinked or twisted as this will impair its life and usability. Ideally rope should be stored in a 'Figure of 8' fashion to avoid inducing twist.
- Sharp bends put under strain on ropes, as this reduces the number of rope fibers taking the load - the remaining fibres being rendered ineffective through compression.
- Ropes wear excessively through chaffing and abrasion if they are worked in the same position for any length of time. Inspect the rope's load bearing areas or 'hot spots' and alter their position on a regular basis. Load bearing 'hot spots' include; Halyard Sheaves, Turning Blocks, Cleats, Fairleads, Genoa Cars, Ratchets, Stoppers and Swivels.
- The ideal rope diameter for each Sheave is available from your Marlow approved rigging specialist or can be found in the guide on page 42.
- Friction will cause strands to melt both externally and internally. But as the melting point of most rope fibres is between 150' - 260'C the risk of damage in normal cruiser / racer situations is slight. If a rope has been overloaded, open the strands to check for heat damage (fusion of strands).
- A correctly spliced rope has between 90 - 95% of the strength of the unspliced rope. Regular inspection of splices is important, if you are unsure about their condition consult your nearest Marlow approved rigging specialist. The break loads in this brochure are for spliced ropes.

STORAGE AND SEASON END:
- Ropes should be stored under a suitable cover and not left to withstand the elements at the end of the season
- They should be clean and dry, out of direct sunlight and away from extreme temperatures.
- Never store ropes on concrete or dirty floors, as dirt and grit picked up by the ropes can work into the strands cutting the inside fibres, leading to damaged ropes and equipment.
- Keep away from all chemicals.
- Salt crystals are naturally abrasive and will affect the life and efficiency of ropes; a wise precaution would be to soak them in fresh warm water.
- Ropes can be washed in a washing machine on a gentle cycle with mild detergent.

If inspected regularly and maintained correctly there is no reason why Marlow ropes cannot last for many seasons of trouble free sailing.

OTHER INFORMATION

ROPE STRENGTHS AND WEIGHTS

Rope strengths are tested according to Marlow's QA25 and 26 quality procedures. Generally these procedures are in line with BS EN ISO 2307, however, a number of other internationally recognised test standards are used including EN 1891, EN 1892 and EN 564.

Rope mass is determined by weighing a sample of rope whose length has been measured at a reference load. For most ropes this load is calculated as:

Reference Load (kg) = D2/8
Where D is the rope nominal diameter (mm)

Most rope strengths in this catalogue are given in kilograms (kg). However, the correct measure of force or breaking strength is Kilonewtons (kN). Conversion factors from one to the other are:

KG TO KN X 0.00981
KN TO KG X 101.972

SHEAVES, PULLEYS AND ROLLERS

When any rope is used around a sheave there will be a reduction in its strength and life. For most non-specialised applications a sheave diameter 8-10 times the rope diameter will suffice, however certain materials such as Aramids may require a sheave size of up to 20 times diameter.
The profile of the groove in a sheave should support the entire rope. Normally a semicircle of 10% greater diameter than that of the rope is appropriate. 'V' groove sheaves should be avoided since they compress the rope and have points of local friction reducing the life of the rope. Sheaves should be maintained so that they rotate freely in use.

WINCHES AND CAPSTANS

When a rope is wound onto a winch it is important that the wraps are neat and tightly wound. This can be achieved by winding the rope on whilst under tension. If the rope is wound on slack then it will be more prone to burying between the turns of the previous layer.

Length of rope that can be held on a winch drum or reel can be calculated as follows:

$$\text{LENGTH (m)} = \frac{710542 \times T(F2-D2)}{D2}$$

WHERE:
T= Traverse in metres
F= Flange diameter in metres
D= Drum diameter in metres
d= Rope diameter in millimetres

TERMINATIONS

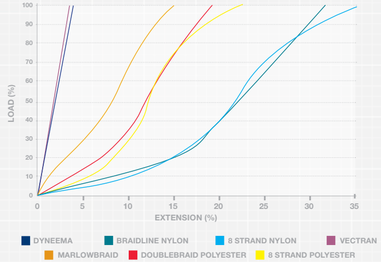
SPLICES: Most Marlow ropes can be spliced, this is normally the preferred method of termination. A good splice using the recommended method should not reduce the strength of a rope by more than 10%.

KNOTS: A knot will reduce the strength of the rope, sometimes very significantly. This loss is caused by the tight bends and compression found in any knot. The amount a rope will be weakened will depend on the knot, type of rope and the material from which it is made but can be up to 60%.

EYE SIZES: Wherever possible the angle formed at the throat of a splice when it is loaded should be 30 degrees or less. This means that the length of the eye when flat must be at least 2.7 times the diameter of the object over which the eye is to be used and the distance from the bearing point to the throat when in use should be at least 2.4 times the diameter.

Some materials like Aramids and HMPEs will require a larger eye with an angle at the throat of 15 degrees or less.

LOAD-EXTENSION CHARACTERISTICS



DEALER STAMP

Marlow Ropes Ltd.
Hailsham
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