

Coatings

Abrasion and heat generation can often be the enemy of synthetic fibre ropes. To that end, Marlow have a range of options to protect single and double braided fibre ropes, reduce fatigue and extend life. These include:

ArmourCoat

- Specially formulated polyurethane coating
- Improves abrasion resistance and durability
- Increases friction, aids handling & splicing
- Provides colour coding (Black as standard, other colour options available on request)

CoolCoat

- Enhances bending performance
- Reduces yarn on yarn abrasion and heat generation by a factor of 2
- Applied at rope manufacture stage

GripCoat

- Synthetic Polymer Anionic Coating
- Prevents ingress of dirt and abrasive particles
- Provides "self healing" properties
- Increases coefficient of friction
- Significantly improves core/cover adhesion

Dyneema XBO

- Improves flex fatigue experienced in continuous cyclic bending
- Reduces yarn on yarn abrasion and heat generation by a factor of 5
- Applied at yarn manufacture stage – can be used in conjunction with any of the above coatings

For further information on all Marlow products, including construction, physical properties, elongation characteristics and termination options, please see the relevant technical data sheets.

Physical Properties

Load Extension Characteristics

Extension and Elasticity
Synthetic fibre load-extension characteristics are non-linear and time dependent. These characteristics are important as they will determine rope behaviour. Over all extension is made up of several elements:

Permanent extension is non-recoverable and will occur when a rope is first used. Individual fibre components of the rope will "Bed In" to their preferred position.

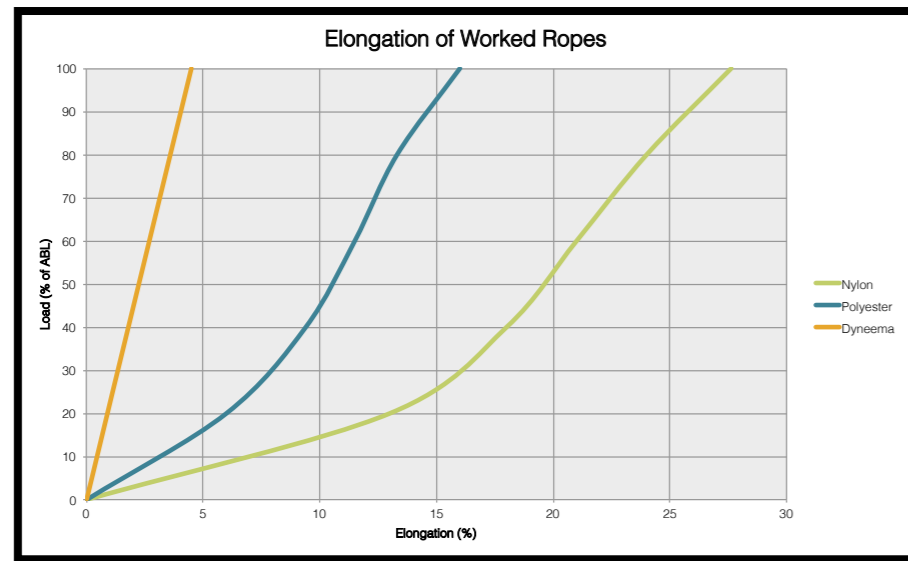
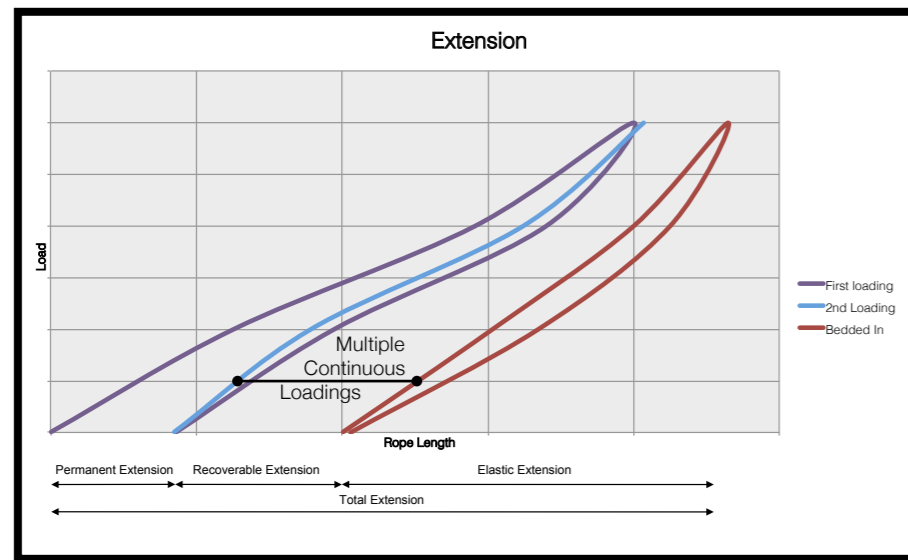
Higher loads will experience a higher degree of bedding-in and increase the "stiffness" of the rope. This is often known as "Storm Stiffness" versus the normal loads of "Tidal Stiffness".

Extension due to "Bedding-In" will continue over subsequent multiple loadings until a "plateau" is reached. If the load is released, over time some of this further extension will be recovered. This is known as **Visco-Elastic Extension**. Ropes subjected to occasional high loads will be influenced by this element of extension.

Elastic Extension occurs with a "Bedded-In" or "Worked" rope and is immediately recoverable upon the release of the load. Elastic extension will dominate a rope's behaviour in a continuously working / cycling environment.

Creep is also permanent, non-recoverable extension and occurs at the yarn molecular level when the rope is under continuous load. Creep can have a significant impact on a rope's behaviour in situations of continuous load.

The graph (right) compares the load-extension characteristics of worked ropes but does not include permanent extension.



Arboriculture



Safety and Access



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Winchline



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Ropes Manufactured in the United Kingdom

Marlow® Marine & Offshore

UHMPE Ropes

D12 Plus

Dia: 12mm - 120mm Applications: Winchlines, Mooring Lines, Lifting slings, Seismic Arrays, Escort and Ocean Towing Lines.
MBL: 16.5 T - 835 T



Marlow D12 PLUS is a premium and versatile "all-round" fibre rope offering a lightweight, high strength and flexible alternative to steel wire and even polyester ropes.

D12 PLUS has been designed to offer significantly improved strength, handling and service life and subsequently can provide a more cost effective solution compared to more traditional products.

The advantages of synthetic fibre wire rope replacements are well documented, but include:

- Size for size replacement for steel wire
- 7 times lighter than equivalent wire with equivalent or better strength
- Easy handling – reduces injury due to weight and wire splinters
- Minimal wear on deck gear
- Low maintenance, easy install and end-for ending strength
- Easily spliced, inspected and repaired
- Minimal recoil in event of sudden load release

Available in diameters up to 120mm, with corresponding Minimum Break Load of 835T, D12 PLUS is manufactured using UHMPE yarn with Marlow's standard ArmourCoat protective finish.

D12 PLUS is available with a number of alternative material grades offering different characteristics and choice for specific applications:

D12 Plus 78

Dia: 12mm - 120mm Applications: Winchlines, Mooring Lines, Lifting slings, Seismic Arrays, Escort and Ocean Towing Lines.
MBL: 16.5 T - 835 T

For applications in which the high strength of Marlow D12 PLUS is required, but continuous load and therefore creep can become an issue, D12 PLUS 78 is a natural choice.

D12 PLUS 78 has the same strength, weight and elongation characteristics as D12 PLUS and can be used for the same applications. However, by utilizing Dyneema SK78, D12 PLUS 78 exhibits only about 20% of the creep experienced by an equivalent rope manufactured with Dyneema SK75 or other UHMPE fibres.

D12 PLUS 78 is available with all the same coating, splicing and protection options as standard D12 PLUS.

D12 Plus 90

Dia: 12mm - 120mm Applications: Winchlines, Mooring Lines, Lifting slings, Seismic Arrays, Escort and Ocean Towing Lines.
MBL: 19 T - 960 T

Offering a strength upgrade D12 PLUS 90 offers an approximate 15% strength improvement over standard D12 PLUS and D12 PLUS 78 for applications where strength and diameter are critical.

D12 PLUS 90 is available with all coating, splicing and protection options, except Dyneema's XBO treatment.

D12 Plus Maxtech

Dia - 12mm - 120mm Applications: Riser Teathers (used with a protective cover)
MBL: 14.8 T - 750 T

Manufactured using Dyneema's latest DM20 fibre, D12 PLUS Maxtech exhibits ultra-low creep for deep water and permanent mooring applications where constant high load causes issues for traditional UHMPE fibres.

D12 PLUS Maxtech utilising Dyneema DM20, delivers industry leading strength, stiffness, durability and longevity in permanent load situations.

Oceanus

Dia: 14mm - 48mm Applications: Winchlines, Lifting Lines, Seismic Arrays, Escort and Ocean Towing Lines.
MBL: 8.5 T - 128T



Marlow Oceanus is a high strength, low elongation "Jacketed" rope that is a lightweight alternative to steel wire. Firm and round in profile, Oceanus has been specifically designed for use on captive or traction winches and for applications in which high wear can be an issue.

The Dyneema / Technora blend cover is bonded to the core to eliminate core/cover slip and improves abrasion and cut resistance, whilst offering excellent grip and protection of the load bearing core. Oceanus floats and has excellent drum spooling properties.

Oceanus uses Dyneema XBO as standard to minimise bend fatigue and increase longevity on high cyclic applications. It is also available in low creep guise using Dyneema SK78.

Superline HS

Dia: 28mm - 80mm Applications: Winchlines, Mooring Lines, LNG Mooring, Riser Teathers, Seismic Arrays, Escort and Ocean Towing Lines.
MBL: 62T - 456T



Marlow Superline HS is a high strength, low elongation "Jacketed" rope that is a lightweight alternative to steel wire. High strength UHMPE core provides strength equivalent to steel wire.

Firm and round in profile, Superline HS has a polyester protective jacket as standard which improves abrasion, protects the load bearing core and improves the rope's coefficient of friction. Superline HS has excellent drum spooling properties.

Alternative Fibre Ropes

Superline PES

Dia: 16mm - 80mm
MBL: 8.1 T - 198T



Applications: Mooring Pendants, Secondary Mooring Lines, General Working Lines, Slings, Strops.

Superline is also available with traditional polyester core and offers a more cost effective solution for many winching, mooring and towing applications.

Braidline

Dia: 8mm - 80mm
MBL: 8.10T - 152T



Applications: Towing, Moorings, Springs, Cable Recovery, Lifting

Marlow Braidline offers excellent resistance to damage over traditional single braid constructions. but higher elongation than Superline construction. 12 strand core and 24 plait cover work together in unison to improve strength and offer extended fatigue life.

Marlow Braidline is available in Polyester or Nylon for higher elongation.

12-Strand

Dia: 8mm - 120mm
MBL: 1.4T - 240T



Applications: Mooring Pendants, Secondary Mooring Lines, General Working Lines, Slings, Strops.

Traditional 12-strand polyester ropes used in numerous applications. Polyester has low elongation and high tenacity with excellent flex fatigue. Torque balanced construction with firm round profile, 12-Strand PES is easily spliced, and used for general working lines, secondary mooring lines, mooring pendants, and slings and strops.

12-strand is also available in Nylon for greater elongation and slightly higher strength over equivalent 12-Strand PES products.

12-Strand Polysteel

Dia: 16mm - 120mm
MBL: 4.8T - 217T



Applications: Mooring Pendants, Secondary Mooring Lines, General Working Lines, Slings, Strops.

12-strand Polysteel ropes offer similar tenacity to polyester, but offer a significant weight reduction and non-water absorption properties. Torque balanced construction with firm round profile, 12-Strand Polysteel is easily spliced.

Chafe Protection

TFH

ChafeGuard

Rubber lined, tubular hose with high tenacity polyester cover. For eye protection and adjustable strength member protection.

DCS

ProTech

UHMPE braided chafe cover. Eye protection spliced into body of rope or for strength member protection, braided directly on to rope and spliced to secure in position. With or without additional Marlow ArmourCoat protection.

DynaGuard

Double layered UHMPE cloth sewn in place for eye protection or supplied with hook and loop fastening for easy positioning for rope protection.

PTC

ChafeGuard

Tough and abrasion resistant woven polyester tubular cloth. For eye protection and adjustable strength member protection.

M-Guard

Flat braid UHMPE chafe cover. Eye protection spliced into body of rope to secure in position. Allows easy inspection of splice. Available with or without additional Marlow ArmourCoat protection.

Product Technical Data

Diameter (mm)	D12 Plus 75 / 78		D12 Plus 90		D12 Plus Maxtech		Oceanus		Superline HS		Superline PES		Polyester Braidline		Nylon Braidline		12 Strand PES		12 Strand NYL		12 Strand Polysteel				
	MBL (Tonnes)	Weight (g/m)	MBL (Tonnes)	Weight (g/m)	MBL (Tonnes)	Weight (g/m)	MBL (Tonnes)	Weight (g/m)	MBL (Tonnes)	Weight (g/m)	MBL (Tonnes)	Weight (g/m)	MBL (Tonnes)	Weight (g/m)	MBL (Tonnes)	Weight (g/m)	MBL (Tonnes)	Weight (g/m)	MBL (Tonnes)	Weight (g/m)	MBL (Tonnes)	Weight (g/m)			
8							2.68	39.2										1.13	48.4	1.43	40	1.23	29.0	MBL 0 - 50 Tonnes	
10							4.93	46.1										1.77	75.7	2.23	62.5	1.92	45.3		
12	16.5	83.0	19.0	83.0	14.8	83.0	6.25	72.1									2.55	109	3.21	90.0	2.74	65.2			
14	20.2	103	23.2	103	18.1	103	8.53	92.6									3.47	148	4.37	123	3.71	88.8			
16	23.9	123	27.5	123	21.5	123	10.7	124			8.10	180					6.45	160	4.33	194	5.71	160	4.81		116
18	31.7	165	36.5	165	28.5	165	13.7	155			11.6	280					8.64	210	5.47	246	7.23	203	6.05		147
20	39.7	210	45.7	210	35.7	210	18.6	205			12.9	320					11.5	290	6.83	304	8.67	250	7.4	181	
22	47.1	252	54.1	252	42.3	252	21.6	225			15.1	360						8.27	368	10.5	303	8.9	219		
24	50.0	270	57.5	270	44.9	270	29.0	277			18.5	450					14.3	360	9.69	437	12.0	360	10.6	261	
28	67.9	375	78.1	375	61.0	375	47.1	390	62.0	458	22.5	550					19.4	490	12.7	595	16.3	490	14.2	355	
32	88.7	501	102	501	79.7	501	53.8	491	73.0	671	30.5	770	19.8	779	25.3	640	16.3	777	21.6	640	18.3	464			
36	108	625	124	625	97.0	625	67.9	621	93.0	774	36.4	870	26.2	988	31.9	800	20.4	984	27.0	810	22.8	587			
40	128	750	147	750	115	750	88.7	777	113	873	46.3	1120	32.4	1220	39.0	990	25.5	1210	32.1	1000	27.9	725			
44	146	871	168	871	131	871	108	932	134	1040	58.2	1370	37.8	1470	47.2	1200	30.6	1470	38.2	1210	33.3	877			
48	169	1040	194	1040	152	1040	128	1119	164	1380	69.1	1650	45.0	1760	56.0	1430	36.2	1750	45.9	1440	39.3	1040			
52	189	1160	217	1160	170	1160			194	1730	84.7	2060	53.5	2050	65.5	1680	43.3	2050	54.0	1700	45.7	1220			
56	222	1420	255	1420	199	1420			228	1900	95.0	2270	62.1	2380	75.7	1950	48.4	2380	61.2	1970	52.4	1420			
60	242	1580	278	1580	217	1580			262	2080	105	2480	71.2	2740	86.4	2230	54.0	2730	68.3	2260	59.4	1630			
64	273	1740	314	1740	245	1740			307	2450	118	2800	81.0	3120	98.0	2540	61.2	3110	76.5	2570	67.0	1860			
68	301	1990	346	1990	270	1990			343	2650	142	3200					69.1	3974	86.4	2901	75.2	2100			
72	342	2240	393	2240	307	2240			379	2850	168	3910	98.0	3950	124	3210	76.5	3930	96.9	3250	83.6	2350			
76	380	2490	437	2490	341	2490			427	3160							85.3	4379	118	3621	93.2	2618			
80	415	2740	477	2740	373	2740			456	3340	198	4560	124	4870	152	3970	96.9	4860	120	4010	101	2900			
88	500	3320	575	3320	449	3320											114	5880	143	4860	121	3510			
96	570	3950	656	3950	512	3950											135	6990	173	5780	143	4170			
104	645	4640	742	4640	579	4640											163	8210	194	6780	165	4900			
112	730	5380	840	5380	656	5380											184	9520	228	7870	192	5680			
120	835	6180	960	6180	750	6180											204	10900	255	9030	217	6520			
																								MBL - 500 + Tonnes	