

Marlow[®] DATASHEET

D12 78

Manufactured using Dyneema's SK78 fibre, D12 78 sets the standard for high performance lightweight ropes and cores. D12 can be used for strops, lashings, purchase systems, backstays and some halyards. With a cover, D12 is ideal for sheets halyards, runners, control lines etc.



APPLICATIONS

Sailing, Halyards, Strops, Tacklines, Lashings, Purchase Systems

MATERIAL

Manufactured from Dyneema SK78
HMPE (High-Modulus Polyethylene)
Very light weight - 6x lighter than steel wire for a given strength
High strength - 60% stronger than steel wire for a given diameter
Low Stretch - see graph below
Good resistance to chemicals and UV
Zero water shrinkage
Low creep HMPE fibre

CONSTRUCTION

TWISTED FIBRE CONSTRUCTION: 12 STRAND BRAIDED CONSTRUCTION:

Improved abrasion resistance
Optimised pitch to yarn twist - improves strength & longevity
Firmer rounder rope, aids handling
Easy to splice
Flexible product and easily handled
Torque balanced

HEAT SET AND PRE-STRETCHED:

Improves strength / diameter ratio
Reduces initial elongation

COATING OPTIONS

MARLOW ARMOURCOAT (STANDARD FINISH):

Specially formulated polyurethane coating
Improves abrasion resistance and durability
Increases friction, aids handling & splicing
Provides colour coding

MARLOW GRIPCOAT:

Synthetic Polymer Anionic Coating
Prevents ingress of dirt and abrasive particles
Provides "self healing" properties
Increases coefficient of friction

MARLOW COOLCOAT:

Significantly improves core/cover adhesion
Enhances bending performance
Reduces yarn on yarn abrasion and heat generation by a factor of 2
Applied at rope manufacture stage

PROPERTIES

RELATIVE DENSITY:

0.97 (floats)

CHEMICAL RESISTANCE:

Excellent resistance to most chemicals (additional information available on request)

UV RESISTANCE:

Very good

MELTING POINT:

140°C

CRITICAL TEMPERATURE:

80°C (exposure to temperatures over this will result in permanent strength loss)

TERMINATIONS

SPliced EYE TERMINATION:

12 strand splice

An allowance of 60x rope diameter should be made for the overall length of the splice.

To optimise the efficiency of a soft eye splice (without a thimble), the angle formed at the neck of the splice should be 30° or less, meaning that when flat, the length of the eye must be 2.7x the diameter of the object over which the splice will be used.

In a sling configuration, attention must be paid to the distance between the two splices. For optimum strength realisation, Marlow recommend the minimum distance between splices of 35x rope diameter

GROMMET OR ENDLESS LOOP:

When calculating the strength of a grommet, a factor of 1.65 should be applied to the break load of the rope

It is important to recognise the D/d ratio of the fittings when specifying a grommet or endless loop. Marlow recommends a D/d ratio of 5x rope diameter for optimum strength realisation. The minimum circumference should be a factor of the splice length and optimum distance between splices and calculated as:

$C = 2(d \times 60) + (d \times 35)$. Divide C by 2 for the finished length

N.B. KNOTS WILL SIGNIFICANTLY REDUCE THE STRENGTH OF ANY ROPE. THIS PRODUCT WILL TYPICALLY RETAIN APPROXIMATELY 30% OF ITS STRENGTH IF TERMINATED WITH A KNOT. THE EXACT FIGURE WILL DEPEND ON THE TYPE OF KNOT USED AND OTHER FACTORS.

ELONGATION

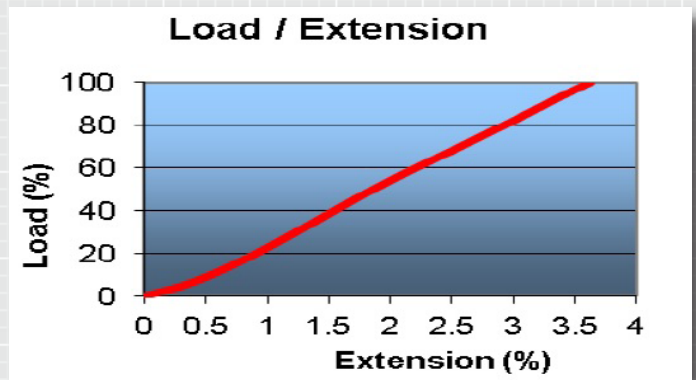
Permanent elongation on first loading: Up to 5%

Typical working elongation (for a bedded in rope):

@ 10% of break load: 0.51%

@ 20% of break load: 0.89%

PERFORMANCE



DIAMETER		MASS		AVERAGE STRENGTH			MIN STRENGTH		
mm	Inch	g/m	lb/100 ft	kg	lb	kN	kg	lb	kN
2.5	7/64	3.7	0.25	569	1250	5.6	512	1080	4.8
3	1/8	5.3	0.36	995	2190	9.8	896	1880	8.4
3.5	9/64	7.4	0.50	1430	3160	14.1	1291	2360	10.5
4	5/32	9.8	0.66	2060	4530	20.2	1850	4080	18.1
5	3/16	12.8	0.86	2360	5190	23.1	2120	4670	20.8
6	7/32	17.7	1.19	3490	7690	34.2	3138	6920	30.8
7	1/4	28	1.88	5360	11800	52.6	4824	10900	48.4
8	5/16	33	2.21	6330	14000	62.1	5697	12600	55.9
9	3/8	37.6	2.52	6940	15300	68.1	6246	13800	61.3
10	13/32	48.3	3.24	9270	20400	91.0	8347	18800	83.7
11	7/16	58.2	3.90	11600	25600	113.7	10433	23500	105
13	1/2	80	5.37	15900	34900	155.5	14266	31500	140
15	9/16	98	6.57	18400	40600	180.7	16576	36500	163
16	5/8	118	7.91	21100	46500	207.0	18989	41900	186
18	23/32	143	9.59	25200	55400	246.7	22635	49900	222.0
20	13/16	180	12.07	33500	73900	329.0	29000	63900	284
22	7/8	216	14.49	38800	85600	321	33400	73600	327

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