

Marlow ^{DATASHEET}®

D12 MAX 99

Manufactured using Dyneema's latest SK99 fibre, D12 Max 99 exhibits ultra high strength for all applications where the highest possible strength is required. D12 Max 99 utilising Dyneema® SK99 delivers industry leading strength, stiffness, durability and longevity. Dyneema® adds approximately 20% to the breakload of the equivalent SK78 rope.



APPLICATIONS

Sailing, Halyards, Sheets, Guys, Tacklines, Lashings, Strops, Highload Lines

MATERIAL

Manufactured from Dyneema SK99
HMPE (High-Modulus Polyethylene)
Very light weight - 8x lighter than steel wire for a given strength
High strength - 70% 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:

Improved abrasion resistance

12 STRAND BRAIDED CONSTRUCTION:

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:

Maximises strength / diameter ratio

Minimises elongation

COATING OPTIONS

MARLOW ARMOURCOAT (STANDARD FINISH):

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)

MARLOW 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

MARLOW COOLCOAT:

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

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

GROMMET OR ENDLESS LOOP:

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

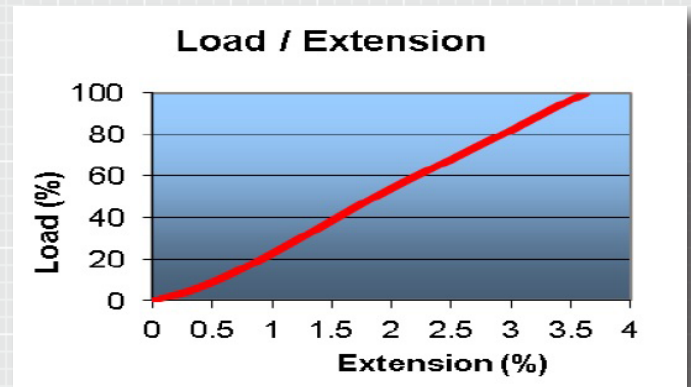
Permanent elongation on first loading: Up to 5%

Typical working elongation (for a bedded in rope):

@ 10% of break load: 0.51%

@ 20% of break load: 0.89%

To break: 3.60%



PERFORMANCE

DIAMETER		MASS		AVERAGE STRENGTH			MIN STRENGTH		
mm	Inch	g/m	lb/100 ft	kg	lb	kN	kg	lb	kN
2.5	3/32	4.5	0.30	1200	2630	11.7	1100	2420	10.8
3	1/8	6.8	0.46	1790	3950	17.6	1650	3630	16.2
4	5/32	11.1	0.74	2950	6480	28.9	2710	5970	26.6
5	3/16	15.6	1.05	3810	8380	37.4	3500	7710	34.4
6	7/32	22.3	1.50	5440	12000	53.4	5010	11000	49.1
7	1/4	35.6	2.39	8940	19700	87.7	8220	18100	80.7
8	5/16	44.5	2.98	11200	24600	110	10300	22600	101
9	3/8	54.0	3.62	12500	27500	123	11500	25300	113
10	13/32	63.0	4.22	14600	32100	143	13400	29600	132
11	7/16	75.5	5.06	17500	38600	172	16100	35500	158
12	15/32	90.0	6.04	20900	45900	205	19200	42200	188
13	1/2	107	7.18	24500	54000	241	22600	49600	221
15	9/16	134	8.99	30700	67500	301	28200	62100	277
17	11/16	184	12.34	38100	83800	374	35100	77100	344

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