

# Marlow<sup>®</sup> DATASHEET<sup>®</sup>

## D12 99

Manufactured using Dyneema<sup>®</sup> SK99 fibre, D12 99 exhibits high strength for all applications where the high strength and low stretch is required. D12 99 utilises Dyneema<sup>®</sup> SK99 to deliver strength, weight saving and durability. Dyneema<sup>®</sup> SK99 adds approximately 20% to the breakload of the equivalent SK78 rope.



### APPLICATIONS

Sailing, Halyards, Sheets, Guys, Tacklines, Lashings

### MATERIAL

Manufactured from Dyneema<sup>®</sup> SK99  
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  
Maximises strength / diameter ratio  
Minimises elongation

#### **HEAT SET AND PRE-STRETCHED:**

### 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

12 strand splice

### SPliced EYE

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

### TERMINATION:

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

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.**

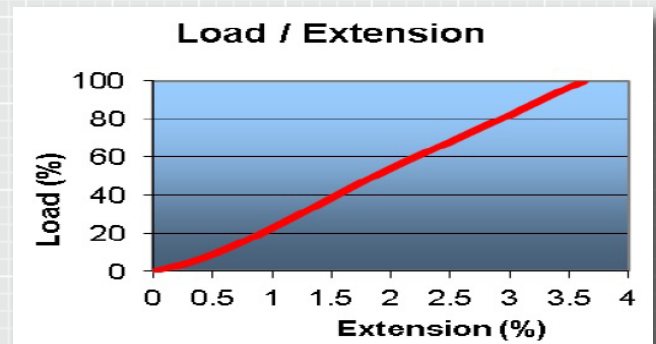
## ELONGATION

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	677	1490	6.6	609	1340	6.0
3	1/8	5.3	0.36	1180	2610	11.6	1070	2350	10.5
3.5	9/64	7.4	0.50	1710	3760	16.7	1540	3390	15.1
4	5/32	9.8	0.66	2450	5390	24.0	2200	4850	21.6
5	3/16	12.8	0.86	2800	6180	27.5	2520	5560	24.8
6	7/32	17.7	1.19	4150	9150	40.7	3730	8230	36.6
7	1/4	28	1.88	6380	14100	62.6	5740	12700	56.3
8	5/16	33	2.21	7530	16600	73.9	6780	14900	66.5
9	3/8	37.6	2.52	8260	18200	81.0	7430	16400	72.9
10	13/32	48.3	3.24	11000	24300	108	9930	21900	97.4
11	7/16	58.2	3.90	13800	30400	135	12400	27400	122
13	1/2	80	5.37	18400	40500	180	16500	36500	162
15	9/16	98	6.57	21400	47100	210	19200	42400	189
16	5/8	118	7.91	24500	54000	240	22000	48600	216
18	23/32	143	9.59	29200	64300	286	26300	57900	258
20	13/16	180	12.07	38900	85700	381	35000	77100	343
22	7/8	216	14.49	46200	10200	453	39700	87500	389

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