



**Sizes / Breaks / Weights**

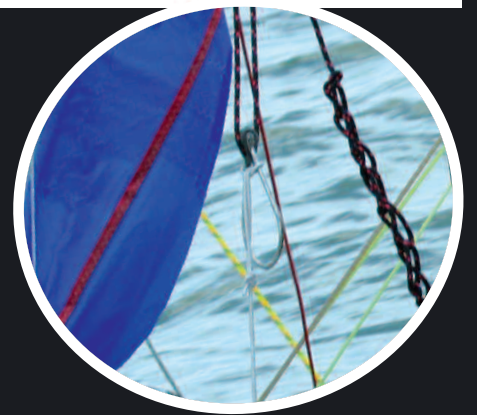
						Excel Racing	
Diameter		Ave Break Load		Min Break Load		Weight	
1.5	1/16	121	267	108	267	0.15	0.10
2	1/12	179	395	139	306	0.34	0.23
3	1/8	320	705	207	456	0.60	0.40
4	5/32	851	1876	500	1102	1	0.67
5	3/16	1218	2685	840	1852	1.9	1.28
6	7/32	1806	3982	1702	3752	2.5	1.68
(mm)	(Inches)	(kg)	(lbs)	(kg)	(lbs)	(kg/100m)	(lbs/100ft)

**Load Vs Extension Characteristics**

# Rope

pimp

Marlow's **Andy Prince** explains how the correct materials were selected for a complete set of new sheets, control lines and halyards for our Fireball.



**A**fter an hour or so with the P&B Fireball experts discussing the requirements for the boat, decisions were made as to which ropes were needed.

### Main and spinnaker sheets

Starting from the back, Marlow's Excel Lite was used for the mainsheet. With its Dyneema core offering the strength needed and its lightweight polypropylene jacket, this sheet also has no water absorption making it the clear choice for this application. With Fireball sailors favouring a split transom sheeting arrangement, 3mm D12 stripped

Dyneema was first tapered into the core of the rope then spliced in to create the Y-section.

P&B's request for tapered spinnaker sheets meant the choice here was again immediately obvious: Excel Taper, the 8-plait matt polyester cover used over Excel Racing is designed specifically for ease of handling and also very easy to strip the jacket for tapering to the required lengths.

### Control lines

Internally the boat was fitted with 4mm Excel Racing for all control lines. This pre-stretched line design has been honed over many years to produce a line with many outstanding features. A braided SK75 Dyneema core with a hardwearing 16-plait polyester cover offers low stretch and

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Diameter		Ave Break Load		Min Break Load		Weight	
6	7/32	945	2083	819	4592	1.70	1.14
8	5/16	1058	2332	855	5141	3.00	2.02
10	7/16	2080	4586	1913	10110	4.40	2.96
(mm)	(Inches)	(kg)	(lbs)	(kg)	(lbs)	(kg/100m)	(lbs/100ft)

**Load Vs Extension Characteristics**

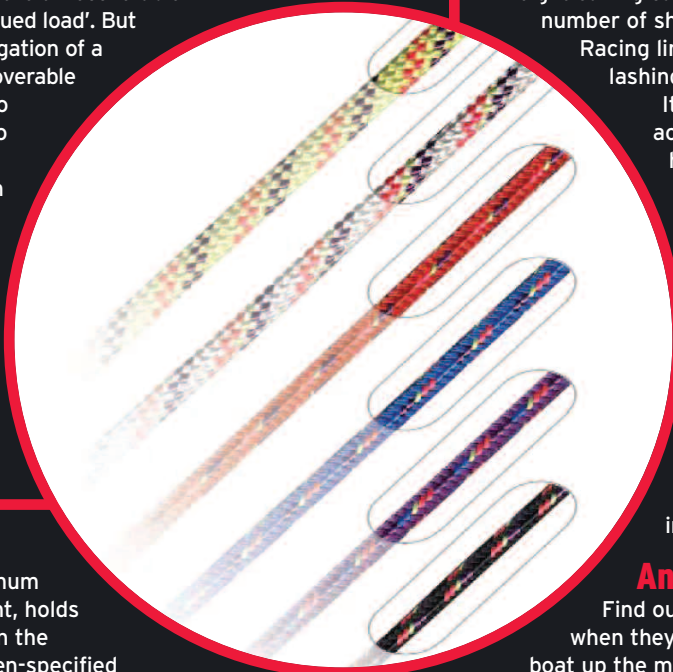
Left and below Excel Lite was used for the mainsheet.



# Choosing your lines

A few thoughts to help you choose the right lines for the job...

**W**hen making the choice of lines it's important to read up on the relevant features of each available product and also to bear in mind its application. Creep is an often over-used and misunderstood word in relation to ropes. Creep in this application is by definition 'the unrecoverable extension of a fibre after continued load'. But this forms only part of the elongation of a braided rope, stretch being recoverable extension. It is also important to take construction extension into consideration. For instance Dyneema will creep but Vectran will not. The overall figures show similar elongation under load, however, V12 (due to the chemical make-up of Vectran) does not respond to heat treatment so cannot be pre-stretched like D12 – a process which can also remove the majority of construction extension in D12.



**Right** 4mm Excel Racing was used for all the control lines.

minimum weight, holds fast in the Harken-specified deck gear and copes well with tight radii. The range of distinctive colours makes it easy to recognise each individual control line and grab the right one in the heat of racing.

Where possible Excel D12 was used in areas to save weight and for ease of splicing, for instance in the primary part of the kicking strap cascade system.

**Below** Excel D12 was used where possible to minimise weight.



Up high the decision was made to replace the wire trapeze lines with 2.5mm V12, significantly reducing weight with no compromise in terms of strength and elongation. This uncovered 12-strand Vectran line is also easy to splice and is UV-resistant due to Marlow's new Armourcoat high penetration coating, which also provides significantly better wear resistance.

For the jib sheets again Excel Racing was the clear choice, this time however moving up to a 6mm diameter line for ease of handling.

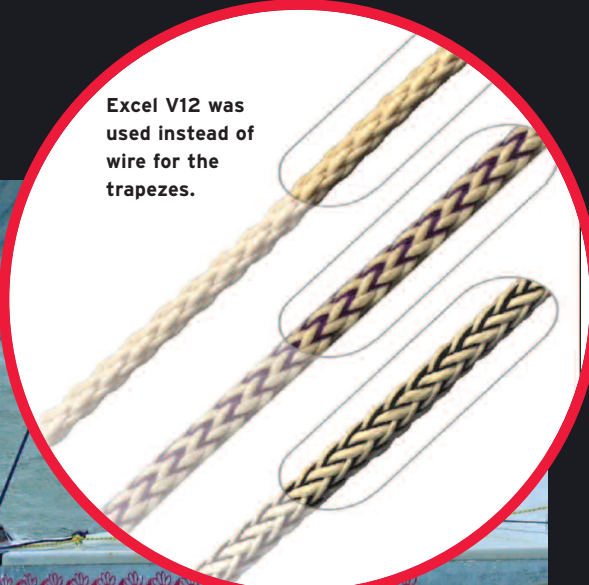
## More weight savings

When fitting out high performance dinghies weight saving can be achieved by reducing the number of shackles used so our 2mm Excel Racing line was used as a permanent lashing were possible.

It's very important to splice accurately and often. During in-house testing our recommended and very simple D12 splice proved to be on average 35 per cent stronger than a bowline knot. Knots often distort the line so as to give uneven load on the individual fibres and can cause early failure of the rope. Extra time spent splicing can avoid unhelpful and untimely failures so it's always worth ensuring you have the right tools for the job in your tool box.

## And next...

Find out how our Fireball sailors get on when they go racing – literally picking the boat up the morning before the class's national championships! – and P&B share their ultimate tuning guide. ■



Excel V12 was used instead of wire for the trapezes.