

Examples of mast section combinations for a 5.5m sail

A ^{1,2,7}		B ^{1,2,3}		C ^{1,2,6}		D ¹	
top	carbon 600g no.2	top	carbon 600g top	top	fibreglass top	top	fibreglass top
ultra c. 900g no.3		ultra c. 900g no.3	carbon 600g no.2		fibreglass no.2		fibreglass no.2
ultra c. 900g no.3		ultra c. 900g no.3	carbon 600g no.3		fibreglass no.3		fibreglass no.3
ultra c. 900g no.3		ultra c. 900g no.3	carbon 600g no.3		carbon 600g no.3		fibreglass no.3
ultra c. 900g no.3		ultra c. 900g no.3	ultra c. 900g no.3		ultra c. 900g no.3		fibreglass no.3
butt	ultra c. butt	butt	ultra c. butt	butt	ultra c. butt	butt	fibreglass butt
Ultra-carbon and carbon				Carbon & fibreglass (this is the recommended minimum stiffness)		All fibreglass (recommended only for very light winds)	
maximum stiffness				← increasing stiffness minimum stiffness		

Notes:

1. A mast for a 5.5m sail requires six mast sections. These mast sections are referred to as the 'butt', 3rd, 2nd, and 'top' sections.
2. An ultra-carbon butt and ultra-carbon 900 no.3 section should always be used together as the two lowest sections of the mast for all 5.5m ultra-carbon/carbon combinations. This combination provides the maximum available strength to the lower part of the mast to minimise the likelihood of failure under high loadings.
3. Between the 'A' and 'C' examples shown above, there is a range of ultra-carbon, carbon and fibreglass combinations that can be used. 'B' is an example. A slightly stiffer mast than 'B' would be achieved by using two ultra-carbon 900g no.3 sections above the butt section.
4. An ultra-carbon 900g no.3 section should not be used above an ultra-carbon 600g no.3.
5. A carbon or ultra-carbon section should not be used above a fibreglass section.
6. It is recommended that a carbon section is used between an ultra-carbon and a fibreglass section. For example, refer to 'C' above. The use of a carbon section will help ensure a more uniform deflection of the mast over its length and will minimise the likelihood of a failure between the ultra carbon no. 3 and fibreglass no.3 section.
7. If a no.2 section is used as the top section of the mast, a sleeve for a mast crane is needed. This is because the internal diameter of a no.2 section is greater than the diameter of a carbon 600g top section for which the mast crane was designed.
8. The 'g' rating refers to the grade (density) of carbon matting (the weave) wrapped around the fibreglass core.
9. The mast section number (e.g. 'no. 3') refers to the relative diameter of the mast section. The higher the number the greater the diameter.
10. Up until about 2006 a Carbon Race Base (CBR) set of mast sections were available. These were the lowest two sections of the mast (a butt section and a no.3 section). Both these sections were 600g. After 2006 the Carbon Race Base (CBR) was upgraded to ultra 900g.