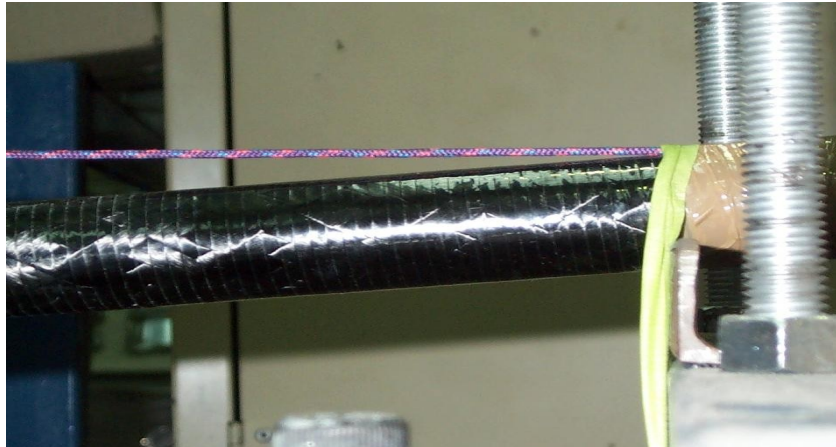


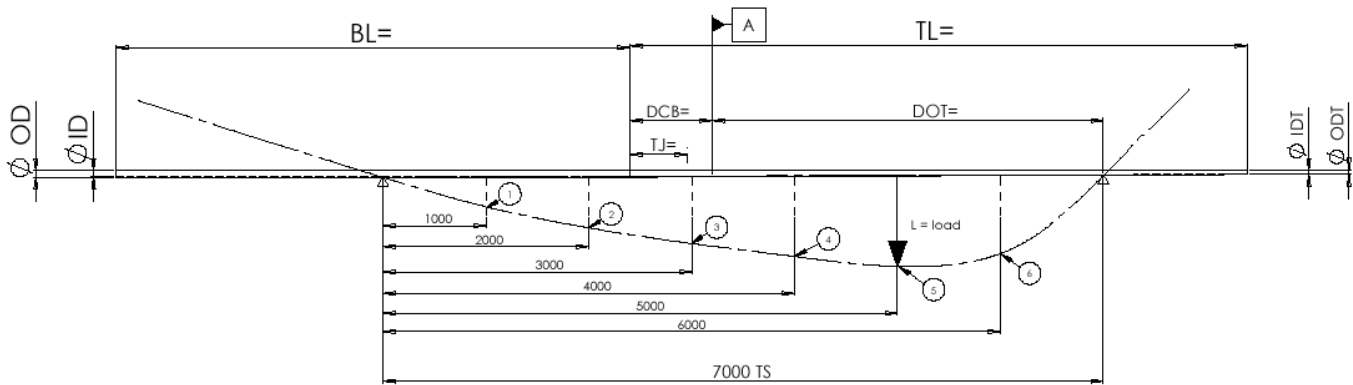
HOW TO: Bend test your mast .

- Support the mast over a span of 6m, 7m or 9m, just ask us to confirm the span for your class. Be accurate.
- Locate the top reaction point at the black band. - record how far down the black band is from the mast tip, as well as from the datum mark.
- Try and make the reaction points as small as possible. (i.e. a knife edge is desired) A small bar or Allen key makes a good pivot. Be as accurate as possible with the span length as a little change causes a large deflection (*deflection is a function of the 3rd power of the span!*)



- Packing Tape can be used immediately at the pivot point in order to stabilise the mast and stop it from rolling. Tape over the pivot point (i.e. no more than 10mm either side) otherwise this will change the bend deflection.
- Use fishing line and tie a loop around at the mast tip and pull the string along the length of the mast. (Along the top off the track) Make sure that it touches the mast top/track at the span pivot lengths. You can tape it down at those points as above. The line must be tight at all times.
- The mast should deflect a little bit under its own weight and we will measure this and subtract it from the deflection caused by the 25 kg weight.
- First mark the mast up into 1m increments with a texta pen or pencil. Mark the load point at 2m down from the tip or the specific point for your class. Just ask
- Apply 25 kg's with a spring balance or weight accurately at the load point.
- Make sure that the fishing line contact points are at the reaction points.
- With a ruler measure the offsets from the tight string line to the mast or track surface at the 1m increments.
- With the string still tight take off the 25kgs weight - the string will go slightly tighter as the mast flexes straighter. Again measure the offsets from the string to the mast or track surface.
- Take the 25 kg offset values away from the initial mast sag offsets in order to get corrected deflections.
- Plot the defections against length in a spreadsheet in order to view the mast bend and compare.
- From here we can calculate the flexural rigidity profile that suits this bend.

- If you're really keen, you can turn the mast through 90 degree and test the sideways deflections in the same way.



	Dim (mm)	Wt (g)
Base length	BL	
Tip length	TL	
Datum offset Tip	DOT	
Datum Cut point Base of tip	DCB	
Track join	TJ	
Test Span	TS	
Load Point	LP	
ID base	IDB	
OD base	ODB	
ID tip	IDT	
OD tip	ODT	

Measuring point	zero load (mm)	25kg load (mm)
1000		
2000		
3000		
4000		
5000 (load point)		
6000		

CST Composites

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