

Wētā Elbow Joint Structure and Repair

The beam elbow joint has an internal carbon elbow extending about 10cm down each tube. This is what gives it its strength. There have been several versions of the cosmetic cap epoxied in place over the years with the current new Wētā where the cap is part of the beam rail assembly which you sit on.

The fibreglass/carbon caps are made in a mold with a gelcoat finish. Although the Wētā has a carbon/glass ama structure there is always going to be some flexing when the rig is tensioned and going to windward in a choppy sea. Unfortunately, although gelcoat does flex, it does have limits over small distances and can crack. The structure is sound but the cosmetics suffer.

Your joint has an upper and lower cap with about 1cm gap which has epoxy filler then painted with black gelcoat. What you see is the cracking of the gelcoat between the caps. The Indonesian manufactured Wētā do not have epoxy filler so to avoid any cracking we just use black silicon which allows movement as the join is not structural.

Repair:

As it is not structural some owners just cut out strips of deck grip and make a feature of it. They also extend the deck grip to cover any other blemishes. Sanding, glassing, filling and painting will just crack over time. You can also cut a 2-3mm deep groove where the crack can then be masked and filled with black silicon.

Important:

If there is some movement in the joint then you are best to seek advice from a boatbuilder as this will need a different repair. This repair involves masking off the joint area, sanding back the caps, removing the gelcoat and sanding the beams.

You would then get some 50cm long strips of 300g 3cm wide biaxial fibreglass cloth (knitted edges), wet the strips in epoxy resin and bandage the area like you would do to your knee. Cover the area with about 3 layers and finish with strips of carbon cloth.

It is then essential to then wrap the repair tightly in the same way with polyester peel ply squeezing out the excess epoxy. When it sets you can then strip off the peel ply (it does not stick to the epoxy) and you will be left with a flash looking carbon knee. This can then be lightly sanded and covered with a coat of resin.