



Why do we make composite lugged bikes?

We have chosen to make composite lugged bikes over metal lugged bikes for a number of reasons:

- **Cost Effectiveness and Labor Efficiency**

Constructing composite lugs is a challenging process, but it involves skills that most people already have. We have seen many people master these skills on the spot, and make their first bike one that rides beautifully. Alternative joining methods, like metal lugs, would take an enormous amount of skill and equipment to make. Additionally, the metal lugs must be fabricated somewhere, someplace, by someone with the requisite skills and expensive equipment. In both the US and developing countries, we have not found metal or pre-made lugs to be a better deal than hand-woven carbon composite lugs.

- **Structure of Bamboo**

Bamboo is what is known as a functionally graded material. This means that the structure varies as you move through the material, and that different parts of the structure have different functions. We've done a great deal of testing on bamboo, and we've found that the strongest and densest collection of power fibers is on the outside of the bamboo, just beneath the silica-containing skin. Now, if we were to remove this outer layer of power fibers so that it could fit into a premade lug, we'd be removing a lot of the bamboo's strength. Alternatively, we could pack in a bunch of epoxy and make the outer diameter of the bamboo bigger, but we have found that to be an expensive and messy solution.

- **Customization**

We value two things in bikes above all others: accessibility and comfort. Accessibility comes from price and understanding, which we have already addressed. Comfort is critical— if people aren't comfortable, they are less likely to ride. A customized bike is much more comfortable than a non-customized bike. With the process we use, we can make every single bike a different and unique design which allows for maximum customization.