

## "Carbon Fiber" is not an adjective / "What's your cheapest carbon bike with Ultegra?"

A work/rant in progress, obviously a reaction to something I experience frequently. :-) --MikeJ--

Carbon fiber is an amazing material. You can make it do all sorts of cool things, by shaping it, by placing the layers at different angles, by using different qualities of material. For bicycles, that can mean superlight, responsive and comfortable machines that were beyond the dreams of cyclists 20 years ago. Today, everybody wants a "carbon fiber" bike.

But "carbon fiber" isn't an adjective. Just having something made of this magical material doesn't guarantee it's a great bike, or even a good one. Not even better than a bike made of steel or aluminum. It's just a material. You can build something really nice with it, or you can build crap. And the crap bike will look just like the nice bikes, if the manufacturer pays minimal attention to cosmetics.

**Here's what you need to know about making a bike out of carbon fiber-** the variability in material qualities, manufacturing care and design dramatically exceeds that of aluminum or steel. The final product quality is thus more dependent upon craftsmanship, design & materials than ever before. Saying a bike is "carbon fiber" is as descriptive of its quality as saying a loaf of bread is made from wheat.

Back in the day when steel was king, nobody thought that all steel bikes rode the same. Subtle differences (especially subtle compared to the those found in modern carbon fiber frames!) made a world of difference in how the bikes handled, responded and lasted. This despite very few choices in material (types of steel), how you could join the tubes (brazed or welded) and shaping/appearance.

But lately our ability to rationalize has far exceeded our willingness to question. People want to prove they're smart by getting "the best deal." And because they don't want to think about much else (aside from thinking how "smart" they are), they convince themselves that there's no difference between a vacuum cleaner bought at Costco instead of a store that not only sells but repairs them. No difference between the quality of a cheap bike bought at a department store vs a bike shop. But there is a difference, because a store that both sells and repairs product is not going to deal with brands and models that come back with problems and can't be fixed. There is no similar incentive for a warehouse store that takes your money, hands you the box, and never sees the item again.

Getting back to carbon fiber, yes, there is a lot of bad stuff out there. You might find a \$2000 bike with carbon frame and Ultegra parts. Sometimes corners are cut in areas people don't pay much attention to, like substituting a different crankset from the normal one found on an "Ultegra" bike. Shifting suffers, but the manufacturer can save a lot of money, possibly \$100 or more. But the frame? That's where you can really save, because the customer can't tell what's "inside." You can't tell if there are gaps (air pockets) in the carbon. You can't tell if the wall thicknesses are consistent. You don't know how they applied the layers of carbon around the crank area, which makes a huge difference in durability and power transfer.

Simply put, you know less about the quality of a "carbon fiber" bicycle frame than just about anything else you might buy, except through reputation of the manufacturer, the shop that stands behind it, and, to some extent, how it rides.

So if you find that \$2000 bike with Ultegra components and "carbon fiber" frame, you just might want to consider what the worth of the bike is for the components alone. Who knows, it might still be a good deal, but don't be so sure it's a great bike. You will probably be better off with a high-quality aluminum frameset for a bike at a given price, than one with low-quality carbon. Remember that it's not just the material, but the extensive amount of time & skill that must go into it to get a great bike, but can be drastically cut out in order to save money. Because, after all, it's easy to put lipstick on a pig and sell it. Do you want a pretty pig, or a great bike?