



History

In early 1999 the Zipp design team began formulating an entirely new ideology, which would drive all of our future product line. The design parameters were clear: an all carbon structure, use of various new materials technologies, drastic weight reduction, and the best durability of any wheel on the market. 18 months of research into new materials and construction methods, countless long nights, and over 200 prototype wheels ridden tens of thousands of abusive test miles by Zipp pros and test riders, have allowed us to finally achieve: ICT. The result is the lightest and strongest series of rims and wheels ever produced. Period.

Technology

ICT takes its name from the initial prototyping attempted by the company. The idea was to use materials similar to the existing rim, but re-orient the laminate structure to take advantage of the fiber directionality. The results of these early tests showed that we could possibly achieve the same strength and toughness with significantly less woven fabric. Ultimately, ICT was still many months away, but the engineers had realized the potential for tuning the final performance of the wheel using very minute changes in laminate structure. Computer and mathematical modeling showed a potential for using precisely placed fibers in very specific laminate orientations to provide the ideal combination of strength, stiffness, ride comfort, and weight reduction. Ultimately, the wholly inverted laminate structure gave way to an entirely new laminate theory and fiber orientation requiring entirely new production techniques. In the process of developing this new technology, the design team decided to question and re-evaluate everything we had ever assumed to be true about carbon fiber. Prepared to abandon the ways of old for the newest in cutting edge technology the team devoted hundreds of hours of research into the latest technology carryover from the aerospace industry. We quickly realized that we were headed in a fascinating direction which could combine this company's years of knowledge gained through bicycle racing, aircraft construction, and motor-racing with new theory and materials from the aerospace industry to create a radically different rim concept.

The basic construction of the rim relies on the world's first and only continuous banding of unbroken radial fibers, and only Zipp has figured out how to do this. This radial monocoque forms the structural "core" of the wheel, and is responsible for not only an increase in stiffness, but also affords a significant increase in strength over any wheel we have ever tested. These purely radial fibers form the basis for our highly directional fiber system, which orients fibers in key directions relative to the radial layer of fiber. In fact, the fiber orientation is so specific, that woven fabric is used exclusively in areas subject to bearing loads such as the spoke nipple seat. This woven fiber combats high stress due to rim drilling and significantly increases toughness and durability with no weight penalty. What this means to you is precise fiber orientation: exactly how it needs to be, exactly where it needs to be. So exact in fact, that no less than five different materials are employed to pinpoint specific structural needs throughout a single rim.

The outer-most (visible) layer of material is applied using Zipp's proprietary "segment" technique developed for the original 440 rim some ten years ago. ICT technology takes segments to the next level using high modulus unidirectional fibers. These segments provide two important benefits to the wheel: they serve to tie together and stiffen the underlying fibers, improving lateral stiffness of the entire wheel. What this means to you is a stiffer more durable wheel, at a significantly reduced weight. Studies show that our segment design provides the perfect balance of cornering stiffness with ride quality while actually increasing durability of the wheel. We think it looks cool as well.

Overall, ICT has allowed Zipp to build a significantly lighter rim, which is stronger, stiffer, and just plain faster than any other rim on the planet, well this planet anyway!