It's all in the shape.





Specifically, symmetric, sinusoidal oscillations. Princeton CarbonWorks wheels feature 24 of them. The unique shape of PCW wheels results in the following benefits:

Structural: Each nipple is at an convex point (apex) in the oscillation. The mechanical advantages of this are clear: Carbon is now being pulled on and put in tension rather than compression. Ie, we are pulling on the rope, not pushing on it.

THIS
Eventually,
wants to become



this

The result of an inherently stronger, more structurally sound shape is enhanced scrutiny of material usage and layup. Because the shape is stronger, material can be both moved and removed. Each "bridge" between each "apex" can be thinned out and optimized, reducing weight while remaining stiffer and stronger.

Structural cont.: Holeless tire bed. Much, much stiffer, as we aren't punching large holes in the outer hoop of the rim, where hoop stress is greatest. Material can be further reduced while still being stiffer than a traditional drilled wheel. Oh yeah, no more tubeless tape either, you're welcome.

Result: A stiffer, stronger, and ultimately lighter wheel. 6560 V1: 499g/rim. 6560 V2: 475g/rim, and stiffer than V1.

Aerodynamic: The trailing edge of the wheel "foil" is continuously varying, preventing pressure differential flip flops (harmonics), reducing buffeting/vortex effects, and offering a more stable and aerodynamically faster wheel. While our wind tunnel tests are impressive and best in class, the real world performance tops even that. A stable wheel results in a confident rider, and a confident rider is faster than a cagey one.



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Variants:

PRINCETON



GRIT 4540



WAKE 6560



BLUR 633

GRIT 4540: All Purpose Road, available extra light for climbing, 30mm max width, also great for gravel.

WAKE 6560: Deeper, aero road, still very light. 26mm max width, 18.5mm hook to hook.

BLUR 633: Ultimate aerodynamic rear disc. Available rim or disc, clincher tubeless ready.

All wheels are tubeless ready, available rim or disc brake, with hole-less tire bed meaning no need for tubeless tape.



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