



Super Size-It

by NICOLA NEMY



I don't like fractions. Mostly because I'm not great at them and they make me feel dumb, but also because the bewildering mess of standards that is the bike industry has embittered me. There are so many names and numbers that mean the same thing — yet two tires with sizes that are mathematically equal, one a fraction and one a decimal, won't be interchangeable. Measurements in inches can indicate a wheel size, but also a frame size. The “c” in your 700c wheel doesn't mean it's 700mm in diameter — it's just a holdover from the old French system that classified rims from narrowest (700a) to widest (700c). They had different rim diameters but shared an outer tire diameter of 700mm, and 700c just became the most popular. The rim is actually 622mm in diameter.

Working in a bike shop has even spoiled the alphabet. The “c” that follows your tire width, as in 32c, *does* mean millimeters, although it neither says that nor is particularly accurate; the width of an inflated tire depends on the width of the rim it's mounted on. Cue sighs. And don't forget that those width measurements switch from millimeters to inches when tires are wider than 50c because heck, why not.

I just want everyone to get along. When we do, the units communicate beautifully. Notice how that 1.25in. steel seat tube perfectly fits a 31.8mm front derailleur clamp? Or how tidily your 27.2mm seatpost fits into a 1.125in. seat tube that's .028in. thick?

Our shared confusion has a lot to do with historical inertia. Every country set out making bikes for the roads they had and measuring them however they darn well wanted to. The language of cycling became a living and breathing one — a jumble of French, English, Italian, metric, imperial, Shimano, SRAM. Who needs ABCs when you can speak the composite dialect of “bike?”

There are three dominant wheel sizes in the adult bicycle market right now. From smallest to largest, they're 26in., 27.5in. (same as 650b), and 29in. (same as 700c but with larger tires). Someone smart once told me to visualize them as small, medium, and large, so now I'm telling you to do that. There are actually dozens of wheel sizes still rolling around: fractional ones, French ones, little ones for folders and kids' bikes, and giant ones for custom bikes and unicycles. But I already told you that I hate fractions, so we don't have time for those here.

When we measure a wheel in sizes like 26in., 27.5in., and 29in., we're referring to the entire caboodle of the tire, rim, nipples, spokes, hub, and (sometimes) tube that make it a round thing that rolls. So these measurements are the nominal diameter of the *tire* that fits that rim. They're just common names. But as you know, there are plenty of different tires that can fit on any given rim, especially since we've started to do kooky stuff like running hefty 3.0in. tires on dropbar bikes and calling them adventure bikes. The steel 29er I rode across Jordan ran a 3.0in. tire in the front, and a 2.8in. tire in the back. I'd bet you a falafel that neither measured exactly 29in. It's also why we don't measure people's heights with their shoes on.

Mercifully, the International Standards Organization (ISO) exists to ensure the interchangeability of tires and rims across

manufacturers, preventing both our rims and brains from exploding. They've adopted the standards made by the European Tire and Rim Technical Organization (ETRTO) to create a tire and rim measurement system that at this point is pretty much global.

The ISO system uses two numbers that you can find printed on the sidewall of your tire. The first is its inflated width in millimeters. You mostly care about this when trying to cram the widest possible tire into your touring bike — as one does. Try to have at least 4mm of clearance between your tire and any part of your frame. Use your 4mm hex key to measure the gap.

The second number, separated from the first by a dash, is the bead seat diameter (BSD), or the diameter in millimeters of the wheel where the tire actually sits. Add this term to your velo-vocabulary — it's the number you actually care about. They're as follows:

“Small”	26in.	559 BSD
“Medium”	27.5in. (a.k.a. 650b)	584 BSD
“Large”	29in. (700c)	622 BSD

Knowing your tire's bead-to-bead measurement becomes useful when you need a new tire, rim, or wheel. Whether you're in Idaho or Istanbul, the rim itself — the hoop that the spokes are laced to — is a much more accurate measurement of wheel size. Find one with the same BSD, and you're good to go.

You also care about your rim's internal width, at least if you want to go around any corners. A general guideline is that the tire width should be between 1.45 and 2 times the inner rim width. Too small of a tire and you risk damaging the rim if it bottoms out on a rock, too large and it's more likely to roll over on itself when cornering because of the sharper angle of the sidewall.

You can bike up and down a lot of mountains without knowing any of this. I did, and it was mostly fine. Then I found a bike shop with a friendly mechanic and would “stop in” after they closed with a six pack in my backpack and ask her questions. She helped me research bike co-ops in the city I was moving to, and I'm fortunate to now hold maintenance workshops for women, trans, and nonbinary cyclists there.

So repeat after me: inch sizes are marketing terms, “c” isn't a unit of anything, and it only sometimes means millimeters. Read the numbers on the side of your tires and make sure you close your quick-release properly. Go to a bike shop or co-op and ask

questions, and if you work in one of those places, be nice, especially to BIPOC and women. It's a wheel — you don't need to reinvent it to start a revolution. 🚲



Nicola Nemy has worked as a bike mechanic and a guide for cycling tours all over Canada's Maritimes, where she also organizes the Monthly Cycle, a social riding and advocacy group for women, trans, femme, and nonbinary riders.