

Tyres for riding unsealed roads

My two cents worth

I'm regularly asked what sort of tyres are best for riding unsealed, or gravel, roads. Gravel riding is growing in popularity, having become a pretty big thing in the USA, where there are many miles (they don't have kilometres there) of high quality gravel roads. My experience is that in SEQ and northern NSW (where I do most of my riding), there are not many gravel roads of the type that there are in the USA. Our unsealed roads do not feature tightly compacted, fine gravel (but there are some lovely exceptions). Our unsealed roads are usually what I call 'rock over rock'. That is, the base surface is often very hard-packed and often sun-baked, strewn with more or less rocks that can hardly be described as 'gravel'. If you search for reviews on gravel tyres on the WWW, you are likely to find that the reviews are based on the experiences of North American riders who ride on those nice gravel roads. I've used tyres that have been highly recommended in reviews but on my rides, I tore the tyres to bits. Just as our unsealed roads are not like the US gravel roads, the demands our unsealed roads place on tyres are different.

Another thing to consider (perhaps the first thing) when thinking about tyres for our unsealed roads is what sized tyre your bike will take. For the purposes of this discussion, I will be talking about 700 c diameter tyres. This is what we all usually ride, but there is a trend towards smaller diameter wheels for off-road riding. Such wheels enable a wider tyre to be installed in a frame/fork that would otherwise require a narrower tyre if they were fitted on a larger diameter wheel. But forget all of that! I'm only talking about 700 c (standard road bike) wheels.

I don't want to open another can of worms, but it is worth mentioning that wider width rims will allow wider tyres to be installed, without the tyre bulging and deforming in a way that will affect its function. Having said that, I have run 35 mm wide tyres on standard width rims (17-19 mm) with no trouble at all. A bit of personal exploration is in order here, but like all things, it's best to avoid extremes, such as running a 40 mm tyre on a 17 mm rim, or a 23 mm tyre on a 25 mm rim. There's lots of information on the internet about tyre width versus rim width, etc.

Generally speaking, wider tyres are better for riding on unsealed roads and those wider tyres are best when they are run at the lowest possible pressure. The tyre pressure/width debate is very alive and well, and I'm not going to kick that hornet's nest. However, for riding on unsealed roads, I (and the folks I spend time on the dirt with) find it hard not to support the 'wider-flatter' principal as being a sound one. If your frame and forks mean that you are restricted to a maximum of 25 or 28 mm tyres, that's okay, but you won't be able to run them at lower pressures (they simply won't have enough bag in them to avoid pinch-flats). You will therefore have a bumpier ride, potentially less feel and control and a greater chance of tearing a side-wall, because the tyre cannot compress and roll over rocks as well as a wider tyre with lower pressure. Having said all that, there are some great tyres in the 25-28 mm range that will let someone with narrower tyre clearance get out on all but the worst of unsealed roads.

It is worth noting something very important at this point. No tyre will be the perfect tyre for the entirety of any one ride. A day out on a bike that includes riding on unsealed roads will usually mean some sections of sealed roads, as well as a variety of surfaces on the unsealed roads.

Obviously then, a chosen tyre will be better or worse over the different surfaces encountered in any single ride. A 'goldilocks tyre' will be one that, on average, handles all the surface demands of the whole ride, but will not be one that is overbuilt for the worst of the roads. The ability to choose such a tyre for each ride improves with experience and discussions about this matter generally go on until the cows come home.

Not all bicycles will take wide tyres. Most modern road bikes will handle a 25 mm tyre okay, or even a 28 mm. There are bikes that are called cyclocross bikes and they will usually take up to a 35 mm tyre. Another type of bike is called a gravel bike, or adventure bike. It's a newish type of sub-species of bicycle and it is evolving fast. Most gravel bikes will take up to a 40 mm tyre, or a 2.1 inch tyre if it has a 650 B wheelset. I'm going to be talking, below, about tyres 40 mm or narrower because that's what I have experience with. Please refer to the internet for other information and opinion.

The information below is far from scientific and is clearly based on my own personal and subjective experiences. It's tempered with some of the experiences that other riders have shared with me, or with what I have witnessed of their experiences. Further, my working knowledge of these things is one that is always evolving. I change my mind on things and sometimes that's through my own experience or through taking the advice or opinions of others on board. Please don't take any of the information below as being *exactly the way it must be*. For me, it's a work in progress and I encourage anyone who's curious to do their own research and experiments.

- Tough tyres are good tyres.

Because of all the rocks that are banging around on our unsealed roads, a basic measure of a good tyre is its capacity to resist tearing and cutting, especially on the sidewalls. Our unsealed roads can render a brand new tyre useless in just a moment if the side-walls are not strong enough. No tyre is impervious to such damage, but some are better than others and some are virtually useless.

- Rolling resistance

Rolling resistance in a tyre that can take a good day out on unsealed roads is not that important – mostly! A more heavily treaded tyre will feel more sluggish on good sealed roads than will one with lighter tread. However, on rough unsealed roads, heavier tread means better traction and when traction is important, rolling resistance doesn't get much thought from the rider.

- Tread and traction

It has been argued very strongly (here: <https://janheine.wordpress.com/>) that tread on a tyre being ridden on gravel (North American gravel) has no role to play. That might be the case on exactly the sort of unsealed roads that we have very few of in Australia. My experience, and that of others I have ridden with, is that tread is important for two main reasons. Firstly, it's very handy to have tread on the back tyre while climbing steep, unsealed roads. Secondly, it's very handy to have tread on the edges of the tyre for cornering, with this being more important for the front wheel. Washing out a front wheel, at speed, in a corner is a lot less fun than washing out a rear wheel.

- TPI (threads per inch)

For road tyres, a higher TPI count generally means a plusher, more subtle ride with less rolling resistance. For tyres that are ridden on our rock-strewn unsealed roads, a tyre with a lower TPI count has more rubber on the side-wall and that protects it against cutting or tearing. It won't deform in the same, lovely way that a higher TPI tyre will, but that means the casing will be less likely to bag and expose the side walls to ride ending rocks. With all other things being equal, lower TPI tyres are less likely to fall victim to catastrophic side-wall damage.

- Gum wall tyres

I reckon that gum wall tyres look really cool on almost any bike. However, gum walls are not as strong as black walls. I've had a lot to do with mountain biking over the years and still do. Gum walled tyres are currently very fashionable in the mountain bike world but everyone who rides them knows that black walls are less likely to tear or be cut by rocks. I also have some inside information from a major mountain bike tyre manufacturer that is in harmony with my field experience. I have ridden gum walled tyres on my gravel bike because I wanted it to look cool, not because I wanted the strongest or most robust tyres.

- Front versus rear tyres

As a rule of thumb, rides that feature rough roads as well as roads that are not rough (some might be hot-mix) can better be ridden with a wider, more heavily treaded tyre on the front and a narrower, more lightly treaded tyre on the rear. The front tyre will provide more traction through corners on rough roads and the back tyre will roll better on smoother roads. As noted above, it's possible to get away with less tread on the edges of a rear tyre on rough roads. A lighter tread will generally mean a physically lighter tyre as well.

- Tubeless versus tubed

I almost didn't mention this matter because almost everybody else has or will. Everyone seems to have an opinion about it. To some, they will talk to you about tubes/tubeless with a religious-like fervour. I'm sure punch-ups have been started over the issue. I have used, and continue to use, both tubeless tyres and ones with tubes in them. I have set up tyres without tubes that were specifically designed not to be run tubeless. I have run tubes in tyres that are designed to be run tubeless. I encourage the reader to look elsewhere (WWW) if they are interested in the merits of tubes versus tubeless, but I can state the following: I have had no particular or unusual problems with either system. I do not usually run tubeless tyres because I change my tyres for different types of rides often enough for mucking around with sealant to be a pain in the neck. Swapping one tubed tyre for another is a five minute, clean and easy job. Swapping tubeless tyres is simply not as easy. I'm lazy and can put up with tubes. My experience is that a tyre designed to be run tubeless (with sealant in it) is more robust a tyre when run with a tube than the same tyre that is not designed to be run tubeless with sealant. I think that is because the casings of a tubeless tyre are heavier/stronger. There is a bit of guessing here, though.

- Everyone has something to say

There are lots of people out there who are pretty much like me: They have a lot to say about tyres for off-road riding and if they are given a chance, they will say it. Getting off the bitumen on drop-bar bikes is very much a thing (like it used to be – when no roads were sealed!) and I think that lots of folks are making lots of money out of it. Seemingly every other day, a new type of tyre is released that promises to be better than any other when the bitumen ends. As I noted above, many ‘gravel’ tyres are benchmarked on North American gravel and reviews posted on the web reflect this. Down under, we need to take such benchmarking and reviews for what they are and we need to take into account our own specific requirements.

- Any tyre can be ridden on unsealed roads

Yes. Any road tyre can be ridden on unsealed roads. I have ridden many kilometres on unsealed roads on 25 mm Continental GP 4000 S tyres, which are light, reasonably flimsy road tyres that roll really well on hot-mix. I usually had not planned to take them off sealed roads. I have wrecked a few tyres doing so. I would not recommend that anyone do so. However, if one rides gingerly enough, slowly enough, with teeth sometimes clenched, with some tyre boots and tubes in the back pocket, and with realistic expectations, any bicycle can go pretty much anywhere – more, or less. My main point here is: Don’t get too hung up on tyres. Just enjoy the ride.

- Tyres I have experience with (in no particular order)

Maxxis Refuse 25 mm and 28 mm Not designed to be run tubeless.

Before I owned a bike that could take tyres wider than 28 mm, I pedalled many roads and trails on Maxxis Refuse tyres in 25 or 28 mm widths, with tubes in them, fitted to my Cervelo road bike. I covered a lot of very rough ground as I learned what a road bike with tough tyres could do. Before it got washed away, I even managed to ride up Duck Creek Road (for those of you that know it) on my carbon road bike with 25 mm Refuse tyres on it. My experience is that these tyres are seemingly indestructible. They are also relatively cheap and are not very heavy, for what they are and for what they can do. They have a light file-like tread pattern that soon wears off, but that doesn’t seem to matter. The casings are incredibly tough and resistant to cuts. They rarely puncture. I have seen a bloke ride over 100 kms on unsealed roads on one of these tyres after the tread had worn away on about 1/3 of the circumference of the tyre. They were riding on the exposed casing of the tyre. They experienced no punctures and the tyre behaved like it would have if it was brand new. The downside of these tyres is that they don’t roll too well on bitumen and they have a distinctly wooden feel to them as they roll along under you.

Maxxis Refuse 32 mm Designed to be run tubeless.

I experimented with these, set up as tubeless with a good quality sealant in them. On fairly good quality unsealed roads, the sidewalls suffered a half dozen or so cuts, in front and rear tyres, that the sealant couldn’t quite heal. I had to fit them with tubes after only a 100 km ride, with about 60 km of it on unsealed roads. I expected them to be as tough as their narrower cousins, but they are not. I have since found out that, although they look simply like a wider version of the original 23/25/28 non-tubeless Refuse tyres, they don’t have the same type of side-walls. They

are simply not a tough tyre and I will not ride them again on unsealed roads because of their vulnerable side-walls. They are now on my commuter bike. Having said all that, I know a bloke who rides these tyres, set up with tubes, on many rough, unsealed roads and trails and tracks. He loves them and has told me he has had no trouble with them.

Panaracer Gravel King 27 mm width Not designed to be run tubeless.

I tried these tyres when they were first released a couple of years ago. They look much like a Maxxis Refuse tyre. Every review I read of them was very favourable. However, all the reviews were from North America where gravel is very different and I should have known better. I suffered many punctures and the side-walls had many cuts and tears. I threw both of them in the bin after only a couple of rides. I went back to the Maxxis Refuse tyres until I later purchased a bike that could take wider tyres. The Panaracer tyres are still getting great reviews in North America but I don't know of anyone around here who has had any success with them. There are many versions of them now, in a variety of sizes.

Clement X'Plor USH 35 mm Not designed to be run tubeless. I have only run them with tubes.

These are now my favourite tyre. They have a smooth centre tread, and are a bit knobby on the shoulders, with more aggressive tread on the outer edges. They are as tough as I need them to be. I've never cut the side walls or even had a puncture in them. I'm on my fourth tyre now and I have ridden them all until the yellow, inner casing of the tyre is well-exposed. The decals will wear off on the side-walls from rocks hitting them, but the side-walls themselves remain undamaged. They seem to last a long time. They roll well on bitumen. They can be hard to find.

Clement X'Plor MSO 36 mm. Designed to be run tubeless. I have only run them with tubes.

Very similar to the USH tyres, but with a more aggressive tread and without the smooth strip of tread in the centre. Everything I have said about the USH tyre can be said about the MSO.

Maxxis Rambler 40 mm Designed to be run tubeless. I have only run them with tubes.

This tyre looks like a lightly treaded mountain bike tyre. Good for rougher trails where more tread and lower pressures can be helpful. I've only recently begun to use this tyre, but all is good so far. They roll remarkably well for a knobby tyre, and with lower pressures they give a fairly plush and comfortable ride. No damage to the side-walls yet.

Happy trails to you

Paul Witzerman