



An essential part of enjoying your time away at the campsite is staying dry and comfortable inside your shelter. But what exactly do those specs on your tent mean and how do they affect its performance?

In this episode of the Snowys Camping Show, Ben and Lauren have roped in Zempire's resident product expert, Ryan Faulkner, to demystify waterhead ratings and make choosing a shelter for your adventures easy-peasy.

Listen to the full episode here:

Or you can watch the video version here:

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Links to things mentioned in this episode:

- [Zempire Pro Series Tents](#)
- [Air tents](#)
- [Hiking tents](#)
- [Seam sealant](#)
- [Episode on tent condensation](#)
- [Waterproofing spray](#)



- [Umbrella](#)
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What is a waterhead rating?

A waterhead rating is a standardised measurement of how waterproof a fabric is and rather than being based on the tent design, it is specific to the fabric itself.

It's basically one component of the overall design of a shelter, and an element that helps you to compare fabrics and materials across different brands.

How is it tested?

The original way to test waterhead ratings involved clamping a clear tube on top of the fabric and filling it with water. The height at which the water leaked through was measured in millimetres, which provided the waterhead rating for that fabric.

Most brands have now moved away from the tube method, and use a pressurised jig called a Suter test. This method applies pressure to a piece of fabric that's clamped down into the machine. At the point in which water penetrates the fabric, a psi measurement is taken and that is translated to millimetres.

However, this doesn't take into consideration any other factors that could be present out in the field such as the factors specified below.

How does a rating relate to rain on my tent?

If your tent is set up with a properly tensioned fly, in calm conditions, you won't need a very high waterhead rating for it to perform well and keep you dry. The minute you add in extra mechanical loads like water pooling, any sort of physical pressure, or even wind-driven rain, the tent fly will be under pressure so a higher waterhead rating will be required to keep you dry.

A good example here is an umbrella, these don't have a high waterhead rating, but they keep you dry as there's no external pressure on the fabric.

Is there standardised testing around this?

There's no standardisation around the testing for waterhead ratings, but there are independent companies that provide this service to brands in the outdoor industry. One of the world leaders is SGS, and Zempire uses a facility approved by them to test their products.

What minimum rating is considered waterproof?

1500mm is considered waterproof for general use in mild conditions. A higher spec'd tent designed for harsher conditions will require around 3000mm for a fly, and 5000mm for the tent floor.

Overall tent design & construction

The overall construction and design of the tent are critical to keeping you comfortable and

dry, not just the waterproofing on the fabric. Look for features such as seam sealing, protected zips, and sloped walls to ensure effective water run off, as well as an appropriate waterhead rating.



Consider the construction of your tent as well as the waterhead rating. Image: Zempire

Maintaining your tent

Mildew is what's going to affect the waterproof performance of your tent fly in the long term. Packing your shelter away clean and dry is the best way to ensure that the fabric performs at its best over time. Avoid using harsh chemicals to clean your tent as it will damage the waterproofing. Instead, use warm water and a soft brush to gently remove any mould. When you're not using it, make sure that it's packed away properly with no risk of abrasions as well.

Fabric strength & waterproofing

The process of adding coatings of PU to an ultralight material to make it waterproof can weaken the fabric, making it stiffer, brittle, and more prone to tears. To produce a tent with a higher waterhead rating, a stronger and thicker fabric is required to compensate the waterproofing.

This is why hiking tents are not as durable or waterproof as car camping tents as they need to find the right balance of weight, durability, and water resistance to suit their purpose.

Why do some tents have very high waterhead ratings?

The reason why some brands such as Zempire choose to over-spec their tents is to ensure long-term performance and durability. Adding a higher waterhead rating provides extra insurance that the tent will hold up for longer periods of time when exposed to factors such as abrasion and UV rays.

How should waterhead ratings guide your tent purchase?

This rating is just one component of the overall tent design, so keep that in mind when choosing your shelter. You still need to balance that with weight, style, ventilation, and quality.

Consider the ways in which you will use your tent and select the fabric spec based on that. For example, if you're looking at a family tent that you intend to use all day and night for two weeks at a time a higher rating is ideal. But if you are searching for a lightweight hiking tent that will only be used to sleep in at night on occasional hikes, a lower-spec fabric will be more than suitable.

Thanks for listening, tune in again for next week's episode!

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If you have any questions for Ben and Lauren, make sure you head over to our Facebook group and let us know as we'd love to hear from you.

Catch you out there!