



If you find yourself cold when sleeping outdoors or stuck trying to figure out the best sleeping setup for your adventures, then this episode of the Snowys Camping Show is essential listening.

Our hosts Ben and Lauren pick the brain of industry expert, Dean Woodall from Sea to Summit! They cover everything from temperature ratings and testing, down vs synthetic sleeping bags, sleeping mats and insulation, ASTM R-Values, and tips for a warmer sleep when outdoors.

Listen to the full episode here:

Or you can watch the video version here:

Time stamps:

- 00:00 - Intro
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Links to things mentioned in this episode:

- [Sleeping bags](#)
- [Sleeping mats](#)
- [Sleeping bag liners](#)
- [Quilts for camping & hiking](#)

Are you a hot or cold sleeper?

When you're trying to work out where to start with your sleep system, the first point of call would be to consider your unique physiology. Everyone is different, so your body mass and how physically fit you are will impact how you sleep. Generally, women have also been found to sleep colder than men based on research and testing.

Your sleeping habits at home are going to be a good yardstick for how you sleep outdoors. For example, if you reach for a thick duvet at home, then chances are you'll be reaching for a warm sleeping bag and mat combination out in the field. You might be used to sleeping with a partner, but when you remove that additional body heat, there's a strong chance that you'll sleep a lot colder, which should also be considered.

External factors

There is a plethora of external factors that will affect how you sleep outdoors. Of course, changes in the outside temperature will affect your body. But also, what you've had to eat before you went to sleep, if you've drunk alcohol, and if you're dehydrated are among the many other influences.

Temperature ratings

To make it clearer and easier for consumers, in 2002 an industry testing standard was developed for sleeping bags. The aim was to provide the market with an 'apples for apples' comparison across different brands. This European system is called the EN 13537 test and is used by most of the big companies to gauge a rating for their bags.

EN 13537 Testing process

The EN 13537 test uses a person-shaped heated manikin which is composed of numerous different zones that each has its own temperature sensors and power sources. It's placed in a climate-controlled room on top of a standardised sleeping mat with an R-value of 4. The manikin will wear a set of standard pyjamas and a scary-looking, cold weather ski mask, while the data is fed into a computer using cables that come straight out of its eyes. The test is performed to the same technical standard for both down and synthetic bags and the results are correlated with real-world qualitative data from real people.

The three temperature ratings

This testing method gives you 3 ratings:

1. **Comfort rating** - the temperature at which a standard woman can sleep comfortably while in a relaxed position.
2. **Lower Limit rating** - the temperature that a standard man can sleep for eight hours in a curled-up position without waking.
3. **Extreme rating** - a survival-only rating for the average woman.



Your unique physiology will affect the elements of your sleep system. Image: Sea to Summit

Down vs synthetic

When sleeping outdoors, the type of fill inside your sleeping bag is largely going to determine your warmth and comfort.

Going by weight to warmth ratio, down is by far the more superior fibre and its properties have yet to be replicated in a lab environment. Its ability to insulate is called loft, and the more loft, the warmer you're going to be. A disadvantage of down is that if it gets wet it will clump up and lose its ability to loft, so you won't be able to get warm. Nowadays, brands and manufacturers have also developed hydrophobic treatments for down which will minimise the effects of moisture.

Synthetics have the upper hand with their ability to reflect heat, so if your bag gets wet, it still has thermal properties. This makes it ideal for kayaking or other water-based activities. Also, some people may prefer not to use down for personal reasons, so it's all dependent on a range of circumstances and factors.

Compressing down can cause cold spots and is the reason behind women's specific bags. These bags are shaped and stitched slightly differently. Some even use a combination of down and synthetic fill in key areas for enhanced insulation.

Liners in your sleeping bag

Sleeping bag liners are fantastic for adding extra comfort and keeping your bag cleaner, which in turn, prolongs the life of the product. But, keep in mind that liners are not EN tested, and don't have specific temperature ratings. If your bag isn't suited to the temperature that you're using it in, you can't rely on a liner to get you over the line. An insulated liner can tweak the temperature, but it's not going to change the dynamic of your sleep system entirely.

Consider what you're wearing to bed

Wearing lots of layers while you sleep can be counterproductive. Instead of trapping warmth, the fill becomes more compressed and loft is reduced. You've got to let the bag do its job to trap/reflect your body heat to keep you warm.



Here's the scary looking manikin during the EN test. Image: Sea to Summit.

R-Value and sleeping mats

As part of a cohesive sleep system, your mat will insulate you from the cold ground which plays a significant role in keeping you warm.

Its thermal efficiency is measured and represented by a number, which is called R-Value. If you compare something like an airbed to a self-inflating foam mat, there will be a huge difference in how both will insulate - so that's an important factor to consider in your setup. Recently, there has been a new test introduced that measures R-Value, which is called the ASTM test. This was driven by US retailers to standardise R-Values and enable consumers to compare ratings across brands for a better and simpler experience.



ASTM testing

The test involves sandwiching a mat between 2 plates - the bottom plate is cold to simulate the ground, and the top plate is warm to simulate the person using the mat. The test measures how much energy is needed to maintain the heat on the top plate over a period of time which is how they determine the R-Value.

You might have noticed that there have been changes to R-Value ratings across many brands. This is just because the test has changed to reflect the new industry standards. The product remains the same.

Final thoughts

It's easier to make your bag cooler than it is to add warmth. Opening a zip for ventilation, or using your bag as a quilt are both effective solutions if you get too warm. If you're wanting one bag to carry you through all adventures, it's worth factoring that into your decision. It's you that's going to warm up the bag, so if you increase your body temperature before bed, it will help speed things up. You can have a hot drink or get your metabolism going by eating a high-calorie snack. You could also use a hot water bottle in your bag, and make sure you remove any damp or wet items from inside your tent plus, sleep in clean dry clothes. Dean's other piece of advice when building your sleep system is to start with your sleeping mat and then build it from there.

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!