



Unfortunately, unless you can defy the laws of physics, there are conditions in which you will get some amount of condensation inside your tent.

Condensation will build up on surfaces where warm and cold temperatures meet. In other words, wherever the barrier is between the warm air inside your tent and the cold air or ground on the outside. This is where physics comes into play.

On a cold night, when the warm air and moisture from your breath meets the cold exterior shell of your tent, the vapour condenses into liquid, causing condensation – we can't stop this from happening.



When the weather is freezing and you're sleeping peacefully in your tent – that's when condensation forms. Photo: MSR

How much water does an average person exhale?

There are conflicting opinions on this, but a little research indicates that an average person can exhale anywhere from 250mL up to 2L of water per day.

Let's assume we breathe out 1L over 24 hours. This would mean that over an 8-hour sleep, each person would breathe about 330mL of moisture into the air.

Add into the mix any wet clothing and equipment inside the tent and you very quickly have a considerable amount of water vapour on it's way to becoming liquid on your tent walls overnight.

This is bad news for single skin tent owners as the condensation will build upon the fabric right next to your sleeping bag. Condensation in a dual skin tent will build up on the underside of the flysheet allowing the inner tent to provide a barrier between you and the moisture.

This video from MSR explains it well:

Hit play for a scientific run-down of condensation, from the folks over at MSR.

So, what can you do to stop condensation build-up in your tent?

For single skin tent owners, the best thing you can do is add a flysheet, then condensation is more likely to form on the flysheet rather than inside your tent. If this is not an option then the best way to mitigate the amount of condensation build-up is by means of ventilation.

1. Create more air flow through your tent

Most tents will have some form of ventilation, usually by means of roof vents, windows or zippers that can be left slightly open to allow airflow.

It can seem counter-intuitive to open vents to allow warm air to escape your tent on a cold night. The important thing to remember is that your sleeping bag is only going to work well if it stays dry, so while the air inside of your tent may be slightly cooler, the inside of your sleeping bag is still going to be cosy and warm.



Open up the vents on the fly and the vestibule to maximise ventilation in your tent. Photo:



Black Wolf

2. Keep the flysheet off the inner tent

Make sure the tent is pitched properly and the flysheet is not resting on the inner tent. You may need to adjust the tension of the guy ropes in damp conditions to maintain tension, but this simple step goes a long way to preventing condensation dripping into the tent from the underside of the fly.

3. Dry the flysheet before packing up

In the morning when there is condensation in your tent, use a lightweight camp towel to dry the wet areas. Alternatively, you can leave the tent pitched for as long as possible with the doors open to allow it to dry before you pack your tent away. If you pack your tent up while it's sopping wet you can all but guarantee that it will be completely wet through by the time you set it up again later that night.

While condensation can be annoying, unfortunately, it's an inevitable part of sleeping in a tent. But you can reduce the amount of condensation that forms by encouraging airflow through your tent.

I watched a fellow hiker wring out a single skin tent one frosty and misty morning, I reckon he could have filled his water bottle! What's the most amount of condensation you've had in your tent?