

A photograph of a backpacking quilt laid out on a grassy field. The quilt has an orange top half and a grey bottom half. In the background, there is a calm lake, some dry brush, and distant hills under a cloudy sky. A black folding chair is visible on the right side of the image.

# **The Hiker's Guide To Backpacking Quilts**

1st Edition, 2020





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## What are the advantages of using a quilt?

- Quilts can be lighter than mummy bags at similar temperature ratings.
- The girth (circumference) of a quilt is adjustable, which increases its low-to-high temperature comfort range, and allows for layering of high-loft insulation layers without compressing the clothing or the sleeping bag.
- Quilts are typically more comfortable for side sleeping.
- Quilts can attach directly to your sleeping pad, preventing you from rolling off your pad and keeping the quilt in place.
- Quilts can be simpler - no zipper or hood.

## What are the disadvantages of using a quilt?

- Quilts require more knowledge and skill to use at their lowest recommended temperature ratings.
- Quilts can be more drafty if you sleep in a shelter that allows wind to blow through it.
- Quilts are not widely available at outdoor specialty retailers.



# Mummy vs. Quilt

	Mummy	Quilt
Bottom Insulation	Yes	No
Hood	Yes	No
Zipper	Yes	No
Attaches to Pad	No	Yes
Variable Girth	No	Yes
Mobility	Less Room	More Room
Draft Control/Seal	Good	Requires Skill
Weight*	Heavier	Lighter
Cost	More Expensive	Less Expensive

\* For the same temperature rating.

A quilt usually has a sewn footbox and no bottom or hood. Here's a photo the bottom of a quilt, showing the cut out bottom and traditional sewn footbox.



## Mummy vs. Quilt (cont.)



This illustration shows the unique feature of a quilt: its lack of bottom insulation.

In a conventional mummy bag (a), the hiker sleeps on the bottom insulation, compressing it and compromising its insulating ability.



In a quilt (c), the bottom panel is missing (saving weight), and the edges integrate directly into the pad with a pad attachment system.



So-called "top bags" (b) are a hybrid design that includes bottom fabric, but no bottom insulation.

Illustration: Mike Clelland, from the [Unconventional Sleep Systems Manifesto](#).



# Can you use a quilt in temperatures below freezing?

*Yes - with a few caveats.*

## 1. Choose a sleeping pad with enough insulation.

It's common to blame a sleeping bag or quilt for being too cold, but often the culprit is your sleeping pad. Learn more about how sleeping pad insulation is measured, and the limitations of manufacturer insulation specs in [Sleeping pad R-values: not that useful](#).



One of the most popular sleeping pads in our community (in terms of both warmth and comfort) is the [Nemo Tensor Insulated Sleeping Pad](#).

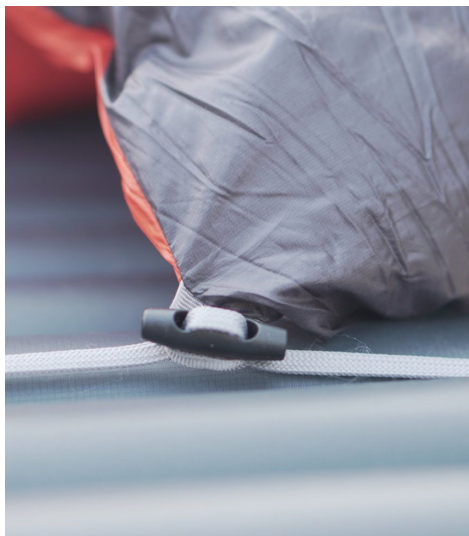
- [Read the review](#)
- [Buy at REI](#)



# Can you use a quilt in temperatures below freezing?

## 2. Use a good pad attachment system that seals out drafts.

Most quilts come with some type of cord or strap system to attach the quilt to a sleeping pad, which helps keep the bottom edges of the quilt sealed to the pad. The best pad attachment systems allow the girth (circumference) of the quilt to be securely and easily adjusted to accommodate different clothing layering systems.



The pad attachment system on the [REI Magma Trail Quilt 30](#) consists of a loop of shoelace cord that runs around the girth of the sleeping pad. Two toggles (black) are attached to that shoelace, and then loops on the quilt can be looped around the toggles. The user can shift the location of the toggles to control the girth of the quilt (larger for more room or warmer temperatures, smaller for cooler nights).

## Can you use a quilt in temperatures below freezing?

### 3. Use a quilt with sufficient loft to prevent body heat loss.

The amount of loft in a quilt (which is controlled by the weight of fill material) is one of the most important factors contributing to its ability to insulate you from cold. The following table provides a rough guide of what to look for in terms of loft vs. comfort:

loft	comfort range*
1 to 2 in (2.5 to 5.1 cm)	30 F to 45 F (-1 to -7 C)
2 to 3 in (5.1 to 7.6 cm)	20 F to 35 F (-7 to -2 C)
3 to 4 in (7.6 to 10.2 cm)	10 F to 25 F (-12 to -4 C)

\* For "most" users who have a reasonable understanding of how quilts work and how to use them properly. Experts can push their quilts to the lower end of this temperature range, beginners should expect comfort at the upper end. Because women require more insulation to combat heat loss, their comfortable temperature will trend towards the upper number in these ranges.



## Can you use a quilt in temperatures below freezing?

### 3. Use a quilt with sufficient loft to prevent body heat loss (cont.).



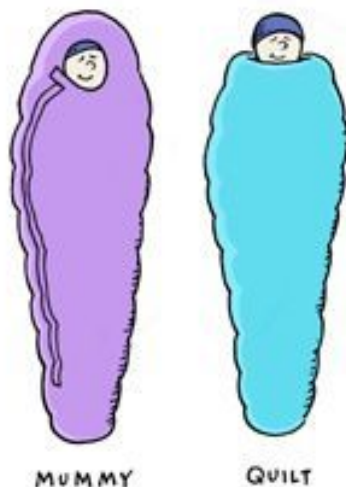
Two-layer loft of the [REI Magma Trail Quilt 30](#) is a little over 4 in (10.2 cm) - so, 2 in (5.1 cm) of single layer loft). The manufacturer rates this quilt as a 30 F (-1 C) quilt, so this is a reasonable estimate.

# Can you use a quilt in temperatures below freezing?

## 4. Integrate your sleep system with the right type of clothing system.

At cold temperatures, heat loss from your neck and head, and out of the bottom edges, becomes more dramatic. Some tips to mitigate this heat loss include:

- Wear a warm hat to bed, or a standalone down hood like this.
- At colder temperatures, wear a hooded high-loft down (or synthetic jacket) when you sleep.
- Consider a quilt that has an integrated draft collar at the neck, which helps seal the head opening from drafts.



A hat or balaclava is an integral part of the sleep system that is built around any hoodless mummy, top bag, or quilt. Illustration: Mike Clelland, from the [Unconventional Sleep Systems Manifesto](#).



## Can you use a quilt in temperatures below freezing?

**(cont.) A down-filled collar sewn into the top opening of the quilt adds about 1 oz (28 g) of weight but helps seal drafts at the neck.**



The [REI Magma Trail Quilt 30](#) includes an integrated down-filled collar baffle (orange) to help seal the neck area from heat loss.

## **Can you use a quilt in temperatures below freezing?**

### **4. Be careful about your shelter's ability to protect yourself from wind.**

When the wind blows into or through your shelter, especially at cold temperatures, you'll feel the effects more when using a quilt than you will if you were using a mummy bag. Here are a few ideas to combat wind as a quilt user:

- Select a campsite below the treeline, and on the lee side of a windbreak such as a hill or stand of trees.
- Select a shelter where its canopy can be pitched low to the ground.
- Double-wall or hybrid (single/double wall) shelters with inner tents made with solid fabrics rather than mesh are warmer in windy conditions.



## **Are manufacturer temperature ratings for quilts accurate?**

**For a traditional down mummy bag, 2 in (2.5 cm) of single-layer loft will generally provide a comfortable night's sleep down to 25 or 30 F (-4 to -1 C) for most users (experienced, male, no wind).**

**On a quilt, the same amount of loft may translate to a comfortable temperature range that is 5 or 10 F higher (e.g., 30 to 35 F (-1 C to 2 C). The reason: heat loss through the neck and open bottom.**

Unfortunately, many quilt manufacturers still adhere to the same rules of thumb for estimating sleeping bag ratings and apply that to their quilts.

Bottom line: look at the loft and fill weight specs, which will help you compare quilts against each other, rather than rely solely on the manufacturer's claimed temperature rating.

## **Are there benefits to a differential cut in a quilt?**

**A differential cut is a feature used in most high-end mummy sleeping bags. A differential cut just means that the outer shell of fabric is cut larger than the inside lining of the fabric. A differential cut allows somebody to get inside the bag and compress the inner layer of fabric without compressing the baffles. So it's a way to maintain consistent insulation all the way around, even when you have pokey things sticking into your quilt like shoulders and hips!**

A differential cut is most commonly used on bags made for colder weather. A differential cut is less important for quilts and bags made for warmer weather. So you don't see this as often on quilts unless they're rated down to 20 F (-7 C) or colder. A differential cut on a quilt that will be used in temperatures above freezing is probably not a critical feature.



# Vertical or horizontal baffles?

Baffles are made by sewing "walls" (usually some type of ultralight mesh) between the inner and outer shell fabrics of a sleeping bag to make "tubes", which are then stuffed with down fill.

Horizontal baffles are oriented perpendicular to the length of your body, while vertical baffles are oriented parallel to the length of your body:



Within any single baffle tube, down can migrate from one end to the other, and this is the basis for most cases favoring one type of baffle orientation (vertical vs. horizontal) over the other.

Horizontal baffle construction has been the industry standard for many years. The rationale for it is based on the idea that the user can shake down away from the center of the baffle (i.e., the top of the bag) towards the sides, reducing its insulation on warm nights.

This feature is sometimes desired for those using winter-worthy down bags. Even on a "warm" winter night where the temperature is still chilly but well above your bag's temperature rating, the ability to shift down away from the top while keeping the bag zipped up and cozy is beneficial so you don't overheat. This is not a common practice for summer or three-season use, so the ability to shift down in baffles and customize your bag's temperature rating sort of goes away.

# Vertical or horizontal baffles?

(Cont.)

However, sometimes down accidentally "falls" down to the sides, especially if you're a side sleeper, which raises the center of the horizontal baffles as your shoulder pokes upward into it. Then, gravity takes over and down can migrate to the ends of the baffle.

Vertical baffles were invented to prevent down from shifting side-to-side based on the premise that if you don't want down to fall off the sides, then it shouldn't be doing so accidentally!

Some down bags are made with both horizontal baffles (e.g., in the foot section, where down migration doesn't occur as much) and vertical baffles (e.g., in the trunk and torso section) for improved down stability.



Both vertical (upper) and horizontal (lower) baffles are used in the REI Magma Trail Quilt.



# Vertical or horizontal baffles?

(Cont.)

## **But again, back to the original question - is one better than the other?**

After investigating the down migration performance of dozens of different quilts and sleeping bags, we've come to this conclusion:

If a down chamber is properly filled with enough down, you're not going to have much down migration, whether you're using horizontal or vertical baffles.

So it's probably more important for you to look at the manufacturer's reputation and how much fill weight is in the quilt.

You'll be able to see if there's enough down in your baffles because they'll be slightly puffy between the baffle seams. If you see a baffle that's flat or even concave a little bit, send it back to the manufacturer. It does not have enough down in it. And there's going to be a high likelihood that because there's not enough down in that baffle, it's going to migrate and cause cold spots, whether you have a vertical baffle or a horizontal baffle.

## **What's the difference between getting overfill and just getting the next lower temperature rating?**

**Some manufacturers give you the option of "overfilling" your down bag or quilt at the time of order. If you order overfilled baffles, that just means you're getting a little bit of extra down in the baffle than what they recommend on their stock (non-custom) bags.**

While puffier sounds better, you can go too far with overfill, creating baffles that are so stuffed that they don't breathe well or drape over the shape of your body contours (which helps reduce air space in your bag and makes it warmer).



# What's the difference between getting overfill and just getting the next lower temperature rating?

**(cont.)**

Slightly overfilling baffles does offer some advantages:

First, overfill can help keep down from shifting inside the baffle.

Second, it provides some buffer against loft degradation in response to moisture (condensation) accumulation in your insulation, which is something to consider if you are using a quilt for multi-day trips in wet and humid environments.

Overfill adds more "puffiness" to the middle of the baffle, even though the thickness between the baffles is going to remain fixed.

Going to a higher temperature rating usually means going to a thicker (i.e., taller) baffle, which ultimately will make for a warmer quilt, because the baffle thickness is higher across the entire width of the baffle, not just in the middle (as is the case when a baffle is overfilled).

**In conclusion:**

- **If you're looking for a warmer quilt, go to a higher temperature rating.**
- **If you're looking for a quilt that resists down shifting inside the baffle or you're going to be hiking in wetter conditions, go for overfill.**

## Are quilts a good option for side sleepers?

**Yes, absolutely!**

**In fact, we think a quilt is a *much* better option for side sleepers than a mummy sleeping bag, because it doesn't get twisted up around your body when you're rolling around.**



If you are a side sleeper and you have the option to purchase a custom quilt or an aftermarket quilt that might come in a larger width, go for a larger width. That will provide enough girth for the quilt to curl around your sides, so that you're not compressing insulation with your shoulders and hips.



## Additional Resources

Learn about quilts and other unique sleeping bag styles in the [Unconventional Sleep Systems Manifesto](#).



Watch Ryan Jordan's [Q&A video about ultralight backpacking quilts](#) on YouTube.



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# Recommended Quilt Suppliers

<b><u>REI</u></b>	<ul style="list-style-type: none"><li>• <a href="#">REI Magma Trail Quilt 30</a> - At 19 oz (540 g), the Trail Quilt is the best-known of the mass market quilts. It uses premium materials (light fabrics and high-fill down), has a generous width, and a terrific pad attachment system.<ul style="list-style-type: none"><li>◦ <a href="#">Read our Review of the REI Magma Trail Quilt 30</a></li><li>◦ <a href="#">Buy Now: \$279 at REI</a></li></ul></li></ul>
<b><u>Feathered Friends</u></b>	<ul style="list-style-type: none"><li>• The <a href="#">Feathered Friends Flickr</a> is one of the highest-quality, and most versatile quilt options available. It includes a full-length zipper so it can be used as either a mummy bag or a hybrid.</li></ul>
<b><u>ZPacks</u></b>	<ul style="list-style-type: none"><li>• ZPacks makes quilts with premium materials that is considered one of the highest in terms of warmth-to-weight ratio.<ul style="list-style-type: none"><li>◦ The <a href="#">ZPacks Solo</a> is a traditional quilt, with no zipper.</li><li>◦ The <a href="#">ZPacks Classic</a> can be used as a quilt or bag, and has a zipper (similar to the <a href="#">Feathered Friends Flickr</a>).</li><li>◦ Read our <a href="#">ZPacks Classic Review here</a>.</li></ul></li></ul>
<b><u>Enlightened Equipment</u></b>	<ul style="list-style-type: none"><li>• <a href="#">Enlightened Equipment</a> makes both down and synthetic fill quilts, uses premium materials, and offers a variety of customization options for size, color, and style.</li></ul>
<b><u>Nunatak USA</u></b>	<ul style="list-style-type: none"><li>• <a href="#">Nunatak USA</a> is a well-known cottage supplier of high-end quilts that are highly customizable but often require a wait time of several weeks.</li></ul>
<b><u>Hammock Gear</u></b>	<ul style="list-style-type: none"><li>• <a href="#">Hammock Gear</a> makes a quilt model called the Economy Burrow - starting at \$139, it represents one of the best values on the market, but does so by using materials that are slightly heavier and offer lower performance-to-weight ratios than materials used in premium quilts.</li></ul>



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