TENT TERMINOLOGY

Here are details on a few widely used tent terms:

Minimum weight: Use this measurement for comparing tent weight. This is the total weight of the tent body, rainfly and poles only—the bare essentials. You will probably pack more tent-related gear (e.g., stakes, footprint) than just this, but this is the figure all manufacturers present as a tent's "trail weight." Often cited as an average weight, this measurement is supplied by each tent's manufacturer and is not independently verified. Your particular tent's average minimum weight may vary slightly (by an ounce or 2) from the weight the manufacturer claims.

Packaged weight: The total weight of all tent components: body, rainfly, poles, stakes, stuff sack, pole sack, instructions and any other items a manufacturer ships with a tent from the factory. This figure is supplied by the tent's manufacturer.

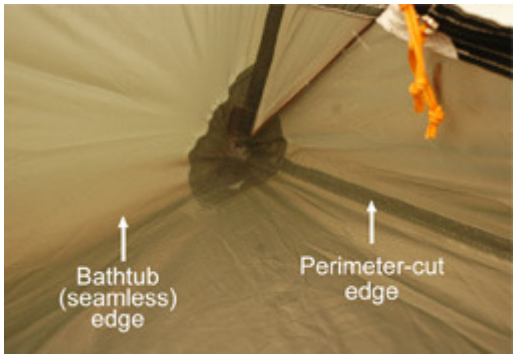
Packed size: The amount of space a rolled tent will occupy in your pack. You can reduce this load by splitting up tent components with others in your groups. For example, have someone else to tote the poles or rainfly while you carry the canopy.

Vestibule: An extension of the rainfly that creates a covered storage area for boots, packs or any dusty or damp gear you prefer to keep outside your living space. Some tents offer a pair of vestibules, a nice convenience (though such a tent's ounce count will rise). A few tent brands offer optional vestibules that create even more space than standard ones.

Guypoints and guylines: A guypoint is a reinforced, patch-like area on the tent to which a guyline can be (or is permanently) attached. The guyline is then pulled taut and tied or looped to a stake. During rain, this keeps a wet rainfly from sagging onto the canopy. In wind, it can reduce a fly's proclivity to flap. Keeping a rainfly taut and separate from a canopy aids ventilation and reduces condensation buildup.

Some guylines include reflective materials. It's a nice bonus. It makes skinny guylines more visible while using your headlamp in camp at night, minimizing tripping mishaps.

Pockets: Interior stash spots for storing gear. Typically they are flat, envelope-like slots into which you slip gear you want close at hand: headlamp, glasses, watch, multitool. Some serve as stash spots for a tent's door—simply wad up the mesh door panel and stuff it into the nearby pocket. You'll find few (even zero) pockets inside weight-conscious ultralight tents.



"Perimeter-cut" and "bathtub" floors: Most backpacking tents are now designed with perimeter-cut floors, where waterproof floor sections (sidewalls and ground-touching panels) are separate pieces of fabric stitched together at the perimeter. Perimeter cuts are alternately known as a Catenary cut, a "cut-in" floor or a "taped insider" floor. The technique creates straight, taut edges along the tent's perimeter, optimizing floor space.

Bathtub floors have more rounded perimeter edges and, other than possible bottom-floor seams, have no stitch marks susceptible to leakage. Their downside: Bathtub floors can potentially curl up around you on all sides in a loose, baggy manner and reduce interior space.

"hybrid" floor. The longer side seams feature a perimeter cut while seamless bathtub edges are used at the foot and head ends of the tents. creates a taut pitch even along the bathtub edges, boosting interior space.

Ventilation

Humans naturally exhale and radiate heat. On a chilly night inside an enclosed tent, the moisture in our breath can cause condensation to form on the underside of the tent's canopy and rainfly. If enough builds up, the moisture could pool into drops of water and start plopping on you and your bag. Not good. The antidote: increased ventilation.

Mesh Panels

Tents intended for milder conditions typically make ample use of mesh. Some lightweight tents, in fact, offer all-mesh canopies—a nice place to spend a balmy, starry night. If you consider yourself to be a fair-weather camper, look for tents with a substantial quantity of mesh in their canopies. They're usually a good choice.

To keep out speck-size pests such as no-see-ums and midges, the grid used in tent mesh (netting, really) is much finer, or denser, than what is found on household window and door screens. Thus it does not offer the same easy-breezy flow of a window screen, but it does much to alleviate any potential stuffiness inside a tent.

On cold nights, of course, sinking chilled air can more easily drift in through mesh. On those occasions your rainfly becomes a key warmth-retaining ally. It is estimated that using a rainfly can add up to 10 degrees of warmth inside a tent.

Vented Rainflys

Some rainflys (often on 4-season tents) are equipped with hooded vents (sometimes called chimney vents) that can be propped open to create a ventilation channel during unfavorable weather. This is particularly valuable in humid, rainy conditions and during still, icy winter nights.

Doors: 1 or 2?

Two doors make entering and exiting a tent much more convenient for a pair of backpackers. No crawling over your partner to come in or go out. Dual doors, usually mesh, also make cross-ventilation easier to achieve.

Two doors are also handy if the weather is bad and the wind is whipping; just choose the door away from the wind. The only downside: 2 doors, with their zippers, can make a tent a few ounces heavier than a single-door model.

Setup Features

Freestanding Architecture

Most backpacking tents are freestanding, meaning the pole-supported canopy can stand on its own—stakes not required (although it's still wise to use stakes at windy sites).

The key advantage: A freestanding tent is easy to move if you need to adjust its position. If the ground is hard but wind is low, for instance, you can skip the task of driving stakes into unreceptive soil. It is recommended, though, that stakes be used if at all possible. This keeps a tent in place in case an unexpected gust of wind blows through your camp.

Another nice feature of freestanding tents: When breaking camp, you can just pick up a freestanding tent, point an open door at the ground and shake out any debris that migrated inside. Very handy.

A note on pole configurations: The simplest dome design involves 2 criss-crossing poles that attach at each of a tent's 4 corners. More advanced designs, aiming to add strength or expand interior space, may include poles with junction hubs, pre-bent pole sections or an extra pole. Such tents may require a slightly longer learning curve to master their setup, but they reward you with greater strength or more interior space.

Pole Sleeves vs. Pole Clips

Poles connect to canopies via clips, sleeves or a combination of the 2.

Pole sleeves help distribute fabric tension over a larger area and thus create less overall stress. Sleeves provide a stronger pitch, but sometimes (particularly during rain) threading poles through them can be a challenge.

Pole clips are easy to attach and usually allow a larger gap between the rainfly and tent body. This improves ventilation and minimizes condensation. Clips are often employed to reduce a tent's weight.

Pole hubs are a recent innovation that pre-connects 2 or more poles for added stability and faster setups. Most often used in conjunction with pole clips, hubs boost strength while creating simpler-to-understand pole structure.

In virtually every case, a tent with fewer poles is lighter and is faster and easier to pitch.

More terminology: The tips on the ends of poles are known as ferrules. Ferrules are inserted into metal rings (known as grommets) found in webbing tabs at the corners (and often midpoints) of tents.

Some tents offer a few dead-end pole sleeves instead of grommets. They are a small, slide-in pocket, or slot, for pole tips. They speed setups.

Fly/Footprint Option

Some tents accommodate an ultralight "fastpacking" setup where the footprint, pole structure and rainfly can be pitched together without the tent canopy. This setup is basically a structured tarp. As with tarps, you save weight but lose the bug protection of a tent body.

Stakes

Manufacturers include stakes of their own design with tents; shoppers are not offered a choice. Some are skinny, push-in probes, some have a corkscrew-like skewer pattern on their shafts and others are stouter, pound-in pegs. If you prefer one style over the type included with your tent, a separate purchase will be needed. You know you're a hardcore camper when you and your companions sit around camp and discuss each another's preference in tent stakes.

If you regularly camp in snow or on sandy surfaces, you need snow stakes: wide, scoop-shaped stakes that hold their position by collecting and holding a dense amount of loose material in their scooped-out cores.

Tip: What if the ground is so hard that stakes cannot be forced into the turf? Tie cords (or fishing line, even dental floss) around rocks and attach them to the exterior webbing at each tent corner. Leave about 1 foot of cord between the rock and the webbing. Then place a second rock (and a third and fourth, if needed) atop the cord. The second rock pushes the cord to ground level and adds weight and friction for security. No cord? Find some smooth rocks and gently place them atop each tent corner.

Poles and Fabrics

Pole Materials

Most backpacking tents use aluminum poles due to their high strength-to-weight and durability. Fiberglass poles tend to be heavier and are susceptible to splintering when repeatedly arced over time.

Over the years aluminum tent poles have maintained strength while engineers have found ways to reduce weight by shrinking pole diameter and wall thickness. Most tents use poles manufactured by Dongah Aluminum Corp. (DAC) of Korea.

The following pole types are commonly found in top-brand backpacking tents:

DAC Featherlite NSL: A widely used pole valued for its high strength-to-weight ratio. The original Featherlite pole, introduced in 1997, was an instant hit with tent-makers. It was engineered with thinner walls and pole-to-pole junction points that replaced inserts with extruded pole ends. Pole sets weighed about 15 percent less than traditional aluminum poles.

The poles, however, did not slip through pole sleeves as well as some users wished, so DAC in 2000 introduced modified Featherlite SL poles (SL standing for "sleeve," not "Super Light," as was commonly assumed).

The latest version is Featherlite NSL ("new sleeve"), which uses aluminum inserts to connect pole sections. Rather than glue or crimp the inserts in place, DAC mechanically expands the insert into pole ends. DAC says this bonding process makes pole junction

points 20% stronger than the main pole tubes, permitting the use of thin (though strong) tube walls.

DAC also uses a "green anodizing" process on its NSL poles. (Anodized aluminum is more durable and resistant to corrosion.) DAC's anodizing eliminates a polishing stage that required the use of phosphoric and nitric acid, both toxic.

Yunan Air Hercules: Features an aluminum/scandium alloy and a "floating connector" that joins pole sections. Both are intended to provide strength and flex at a low weight. Found in Mountain Hardwear's Atlas Pole System.

6000-series aluminum: Aluminum is available in various grades, from a 1000 series through 9000. Aluminum uses alloys to make it heat-treatable. In 6000-series aluminum (6061 being commonly used in tent poles), the alloys are silicon and magnesium, resulting in medium strength and good corrosion resistance.

7000-series aluminum: Zinc is the major alloying element in this series, which includes poles identified as 7075. Small amounts of magnesium are also used in 7000-series poles, creating a strong, kink-resistant, high grade of lightweight aluminum commonly used in aircraft. 7000-series poles will flex further than 6000-series poles (of the same diameter) before they bend or break.

The latest DAC Featherlite NSL poles in the 7000-series are composed of a proprietary alloy known as TH72M. DAC created it to boost the poles' resistance to what is known in the aluminum industry as stress corrosion cracking (SCC), a key foe of high-strength aluminum.

Note: Manufacturers often include a repair sleeve with a tent's pole set. It's a short tube with a slightly larger diameter than the poles. It acts as a splint on a bent or broken pole section. If available, use duct tape to secure the sleeve in place.

Fabrics

Nylon and polyester are standard tent fabrics. Nylon is fractionally lighter, tougher and more abrasion-resistant. Polyester is inherently more resistant to water and has a reputation for better withstanding degradation caused by ultraviolet rays in sunlight (though no study has verified polyester's UV resistance). Thus polyester is commonly used for rainflys.

The weight of tent fabrics is expressed in denier (D), a measurement of a yarn's weight (in grams) based on a 9,000-meter (5.6-mile) length of that yarn. Higher numbers indicate coarser, more rugged fabric; lower numbers reflect a lighter, finer material.

A common tent floor fabric is 70-denier (70D) nylon—light but relatively durable. Standard canopies range from 40D to 70D. In the endless quest to deliver lighter tents, though, some canopies dip as low as 20D and floors to 30D.

Ripstop nylon (woven with a doubled thread at regular intervals; it prevents rips from spreading) is often used in tent canopies. It is a touch lighter than taffeta nylon (a common, high-durability floor material) and gets used for floors in low-weight tents.

Coatings: Tent floors and rainflys come with a waterproof coating (commonly polyurethane) applied to their interiors. Tent manufacturers sometimes apply a coating to the exterior of a rainfly or occasionally coat both sides.

Ultralight tents use low-denier fabrics in floors and rainflys to reduce weight. Often silicon is used to treat such fabrics for waterproofness. Polyurethane (PU) is a fractionally better waterproofing agent, but silicon boosts the tear strength of lightweight fabrics.

Some tents apply PU to one side of a rainfly and silicon to the other to get the optimal benefits of both coatings. Other tent brands may use a lower-denier fabric in rainflys for ultralight tents.

Technical footnote: Because nylon has the capacity to absorb some water, polyester is commonly used as rainfly material. Yet silicon-coated nylon resists the absorption of water equally as well as PU-coated polyester.

Nylon treated with silicon is often referred to as "silnylon." Silicon is also used to coat polyester.