



## TECHNICAL SPECIFICATION: SLEEPING BAGS

### FEATURES OF A SLEEPING BAG:

Most modern sleeping bags are of a 'mummy' shape as this is the most thermally efficient design. A sleeping bag with little or no 'dead space' around the user is warmer as there is less air to warm up with heat from the body.

**Shaped hood:** This usually has drawstring adjustment, which allows you to pull the opening in around your face, maximising warmth.

**Neck baffle:** this may be present, with drawstring adjustment. The baffle maximises warmth as it allows your bag to be closed in above the level of your shoulders and stops a 'bellows effect' (caused by the action of you breathing) drawing cold air into the bag.

**Zip:** This is usually full length, although some bags may have either a half-zip or no zip, to save weight. The zip will usually open from either end, to allow venting in warmer conditions. Many bags come with the zip either on the left or the right hand side (LH or RH); it is generally easier to use a zip on the opposite side to your dominant hand i.e. right-handed people usually buy a LH bag. A pair of LH and RH bags can also be zipped together.

**Foot:** In most mummy bags, this is shaped to provide more room for the feet, as this is more comfortable and usually warmer. Some travel bags have a squared-off toe, with the zip extending the whole way around it; this enables the bag to be opened out and used like a quilt.

### SLEEPING BAG FILLINGS:

Broadly speaking, the better a filling is, the lighter it will be for a given amount of warmth and the less space it will take up. Weight and pack size, for a given amount of warmth, are two of the key considerations when choosing a sleeping bag.

There are two major types of filling used in modern sleeping bags: down and synthetic. Each type has its own set of advantages and disadvantages.

**Down:** This filling is made up of highly specialised insulating feathers, normally from ducks or geese. Good down bags are unsurpassed, in terms of warmth to weight ratios; if you look after it properly, a good down bag will considerably outlast a synthetic bag.

The only snags with down are that it tends to be more expensive than synthetic fillings and also will not insulate you when it's wet (for this reason it is essential that you keep your down bag dry at all times).

The quality of down is usually mainly expressed as 'fill power' which is a measure of how much space a given weight of down

will occupy under a standard amount of pressure (the volume occupied by the down being directly proportional to the air it will trap and thus the warmth); the higher the number, the better the down.

It should be noted that, occasionally, down can cause allergy difficulties with some people; this tends to be more likely with cheaper down than the better quality varieties (the latter are usually free of dust).

**Synthetic:** This term encompasses a whole range of sleeping bag fillings, all of which are made from synthetic fibres. They range from simple hollow fibres, all the way up to complex fibres which are designed to mimic the structure of down. Synthetic fillings tend to cost less than down, but they last for a shorter time.

Besides the price, the main advantages of synthetic fillings are that they will still keep you warm when wet and they are easier to look after than down (see section on sleeping bag care).

### SLEEPING BAG CONSTRUCTION:

There are several different types of construction that are used in sleeping bags for outdoor/travel use; each has its own advantages and disadvantages.

#### Single Layer:

As the name suggests, a single layer of filling; this method tends to be most suitable for summer weight bags as it tends to be light and packs down small, but can have 'cold spots' when stitched through. Often referred to as 'stitched through' construction in the context of down bags.

#### Double Layer:

This method of construction adds in a second layer of filling; if the stitching through that holds the layers together is offset, this eliminates cold spots. This method of construction tends to be warmer, but also bulkier and heavier.

#### Box Wall & Trapezoid:

These methods of construction are variations on each other and are used in down bags. Down is made up of discrete down clusters, rather than the more substantial 'mats' of a synthetic bag; the down needs to be contained in compartments within the bag. Box walled construction produces these compartments, without the risk of cold spots associated with stitched through construction. Trapezoid construction produces chambers for the down which overlap; this is a more subtle construction method, which is usually even warmer than box walled. On really warm down bags, more than one layer of box walled construction is even sometimes used.

### FABRICS:

The inner and outer of a sleeping bag have different perform-

ance requirements and as such are often made of different fabrics.

**Outer fabric:** These are almost exclusively synthetic materials which are windproof (and down-proof, in the case of down bags); they will usually have a water-repellent coating, to provide some protection against damp. There are a few outer fabrics used that are waterproof (although the stitching normally isn't, so the whole bag isn't technically waterproof); this is especially useful with down bags, which must be kept dry.

**Inner fabric:** There's a bit more variety here, but synthetic still rules (down-proof, again, in the case of down bags), especially in better sleeping bags. Cotton/polycotton usually costs less than a high-wicking synthetic but traps moisture close to your skin which can have a chilling effect. If at all possible, we recommend getting a bag with a high-wicking synthetic inner.

### TEMPERATURE RATINGS:

The whole area of temperature ratings on sleeping bags is perhaps the most contentious anywhere in the outdoor trade, largely because no-one has been able to agree on a standard method of measuring such things. There is a new EN standard looming, but it is not a legal requirement yet, so not all bags are measured according to it.

The commonest method of relating bags to a comfortable temperature range is to use season ratings; all the season ratings we assign to our range of bags are derived directly from the manufacturers' published temperature ratings. We do not simply quote the suppliers' season ratings as not everyone agrees which seasons should relate to which temperatures!

The following table indicates the rough temperature ranges which relate to the season ratings we apply to our sleeping bag range.

### See 'Sleeping Bags Temp Ratings' on page 3

Some bags do not fall neatly into a whole season rating, so 'intermediate' season ratings are also used; an intermediate season rating will relate to the temperatures of the season ratings immediately above and below it e.g. a 3-4 season bag should be comfortable down to about -5 degrees Celsius.

The comfortable use range is the one you are most interested in; within this temperature range, it should be possible to get a comfortable night's sleep and not be too cold. The extreme use range is more of an indicator of the temperature down to which you'll probably not get hypothermia, but don't expect a comfortable night's kip! Be warned: the more extreme the conditions, the sketchier this rating becomes.

The temperature ratings assume that all baffles and hoods are done up properly; if they aren't, the sleeping bag will be a lot less warm.

It should be emphasised that these temperatures are only a guide; different people feel the cold to very different degrees. There are also a number of other factors which can alter how warm or cold you feel:

Have you eaten recently? If you've had a good meal before bed,

you will feel warmer than if you are hungry.

Are you dehydrated? Heat is generated by your body's metabolism, which doesn't work as effectively if you're dehydrated.

What are you wearing? If the temperature is at the lower end of what your bag is designed to cope with, it's worth wearing more clothing; a long sleeved thermal and long jons are worthwhile in such cases. A fleece hat is also a good idea – you lose a awful lot of heat through your head and a hat can help fix this easily and cheaply.

What are you sleeping on? Your body weight will compress the filling of your sleeping bag under you; this prevents the underside of your bag from insulating you from the ground. To avoid getting cold by these means, it is essential that you sleep on something that will insulate you from the ground; foam mats and Thermarests (see sleeping bag accessories) are ideal for this purpose.

### CARE OF YOUR SLEEPING BAG:

If you look after your sleeping bag properly, it should provide you with years of good service; equally, if you don't take care of it, its useful life may be significantly curtailed. This section provides you with a few pointers to maximise the use and enjoyment you get out of your sleeping bag.

**Storage:** You should try and store your sleeping bag unpacked in a warm dry place, to help it maintain its loft. The stuff sack should only be used to minimise bulk during transit.

**Keep down bags dry:** As mentioned elsewhere, down bags must be kept dry; a good idea is to get a waterproof stuff sack for your bag to ensure it stays dry in transit. The Pneumo Stuffsacks from ME (see accessories section) are a good example of this type of thing.

**Cleaning:** Synthetic sleeping bags can generally be carefully machine washed (be really careful that you follow the manufacturers washing instructions); best results will be achieved if you use something like Tech Wash, rather than a synthetic detergent.

Down bags are a menace to wash yourself and it is very easy to damage them in the process; we strongly recommend getting down bags cleaned professionally – Rab, for example, recommend Franklins for this: [http://www.franklinsgroup.co.uk/duck-down\\_feather.html](http://www.franklinsgroup.co.uk/duck-down_feather.html)

**Sleeping Bag Liners:** These are also covered in the sleeping bag accessories section, but are worth a mention under 'care' too. A sleeping bag liner is an extremely useful bit of kit as it means your actual bag gets dirty far less quickly when in use and so you avoid having to clean your sleeping bag as often. Sleeping bag liners are much quicker and easier to wash than the whole bag, plus you can use them on their own in hot conditions.

