

DOWN AND OUT

A BUYER'S GUIDE TO DOWN JACKETS AND SLEEPING BAGS

Rab Carrington, main man at the appropriately named RAB Down Equipment, gives his personal view on what to look out for when buying a down jacket or sleeping bag

WHY Down?

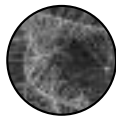
To date, technological advances have failed to supersede down in terms of warmth / weight ratio, pack size and longevity. The beauty of down is its Compressibility, Recovery and Durability. Down is not only the best insulator but is also the most environmentally friendly, being a by-product, natural and fully recyclable.

DOWN vs Synthetics

Man made fibres are cheaper than down and maintain a reasonable level of insulation when wet, but they are heavier, bulkier, less efficient and have a shorter life-span than down (typically 3/4 years compared to 10/20 years for a quality down filled product).

In laboratory testing for Tog value (a measure of an insulating material's ability to trap heat) weight for weight, down insulation is proven to be up to twice as warm as its synthetic counterpart. This is due to the fact that down holds a greater volume of still air than any other insulator and therefore has greater warmth to weight ratio than any synthetic insulating fibres.

It is the tiny hairs on each cluster of down that makes it unique, they give it the ability to trap warm air more efficiently than any other man made fibres. Naturally, nature has provided us with the most efficient form of insulation.



Down Cluster



Synthetic Fibres

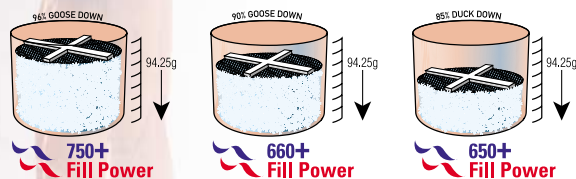
DOWN Quality

The best down is that of the Eider duck, however it is also the most expensive (£500/Kg) as it has to be hand picked from the empty nests. Goose down is commercially the best product available and is used in most high performance products, while standard duck down is a cheaper alternative yet still of excellent quality.

The quality of Down is measured using two criteria, its Fill Power and Down content.

FILL Power

The Fill Power of down measures 'the strength of the down' or its ability to resist compression and how well it can loft. A Fill Power Rating of 750+ indicates that a 30g sample of down will occupy 750 cubic inches when subjected to a standard compression force.



The Lorch Fill Power meter is the recommended standard of the International Down and Feather Laboratory (IDFL); this standard overrules the standards of each country in case of dispute. The USA Fill Power meter is different. Comparisons to the Lorch machine have been carried out by the IDFL, findings indicate the USA Fill Power meter gives a higher reading.

Generally, the higher the Fill Power the better the down quality, however most importantly, all downs do not perform equally. The type of down, the mix content and the durability have all to be taken into consideration for assessing overall performance and so a single number like fill power only gives limited information. It is usually advisable to listen to specialist shop staff, who should have a good handle on performance from customer feedback.

DOWN Content

Down is graded according to the mix of pure down clusters and small feathers. This is represented as a percentage ratio i.e. 85/15, 90/10 or 96/4. A down which is quoted as being 85/15 indicates that it comprises 85% down cluster and 15% small feather.

It would be inaccurate for any producer to claim they use 100% down, the only way to produce this would be to extract the small feathers by hand. Also, claims have been made that suggest a percentage of small feathers in the down is desirable to make it

more robust; this is not true. In laboratory tests it has been proven that the purer the down mix the greater the level of insulation achieved.

CONSTRUCTION Techniques

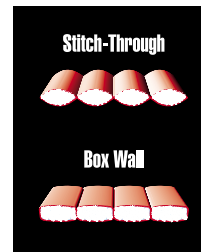
The construction technique utilised in a down sleeping bag or jacket is as important as the down filling itself. Optimal sizing of channels and down fill is paramount to avoid cold spots and low thermal efficiency.

Typically, lightweight mountain jackets will incorporate a Stitch-Through Construction, being very light and versatile.

The seams creating the channels for the down are sewn directly through the garment creating cold spots at these points. Any cosmetic seams will compound the problem.

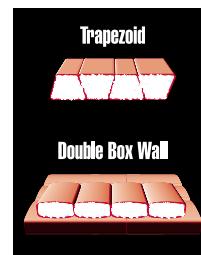
A more efficient method of creating down channels is the Box Wall method as utilised in most sleeping bags and extreme jackets. A fabric baffle will be attached between the inner lining and outer shell creating a compartment for down that has no cold spots. Although heavier and more expensive, this is by far the best method of utilising down in a jacket or sleeping bag.

More advanced baffling, such as trapezoidal and double box wall, are also currently available.



Stitch-Through

Box Wall



Trapezoid

Double Box Wall

TEMPERATURE Ratings

Temperature ratings for jackets and sleeping bags are extremely variable and should only be used as a rough guide. Comfort levels are not only dependent on the ambient temperature outside; other variables such as peoples' metabolism, level of fitness, degree of fatigue and hydration, standard of diet, type of climate and altitude, wind conditions, humidity and type of accommodation all play a key part.

FABRIC Technology

Nylon or Polyester Microfibre shells (i.e. Pertex®, Toray®,) are inherently wind resistant and downproof, making them ideal for insulated clothing and sleeping bags. Low weight and soft handle provide excellent drape and minimal pack size. Nylon offers superior abrasion and tear strength. Rip-Stop Nylon is stronger still.

It is accepted that the thermal efficiency of down and synthetic insulation degrades when exposed to moisture. Therefore, one of the principal demands on any woven structure used as the outer shell of outdoor equipment is its ability to shed water. Manufacturers address this in two ways:

DWR+ (Durable Water Repellent) Finishing Treatments.

This encapsulates each filament in the fabric with a hydrophobic (water hating) polymer. This treatment enhances the fabric's natural water shedding properties and, because it is not a continuous coating, breathability remains unimpaired.

Coatings

Advanced technology has seen the introduction of very lightweight, breathable coatings that provide an impermeable barrier against spindrift and moisture over extended periods, ensuring that the down filling is dry and efficient. However, seams will leak as they cannot be sealed. Beware in wet weather! In warmer climates, physical coatings can lead to a feeling of 'clamminess' so it is only recommended for those extreme users. (i.e. Pertex® Endurance™, Gore® DriLof™).

SLEEPING BAG DOWN JACKET Features

TAILORING

Available from certain manufacturers to cater for very 'large' and very 'small' people. Ensure you buy a sleeping bag the right size or it will not keep you warm.

HOOD COWL (Pic)

Down filled hood cowl with drawstring that snugly contours around your head for really cold conditions.



3-D NECK BAFFLE (Pic)

Down filled neck baffle with drawstring and Velcro closure to trap warm air and keep cold draughts out.



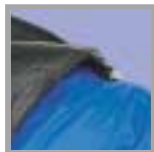
ZIPs (Pic)

Sleeping Bags with zips are more versatile as temperature can be regulated. Strong coil zips with locking sliders also enable two bags to be zipped together: make sure you buy a left and right zip option.



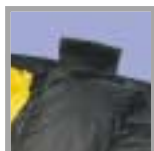
ZIP BAFFLE (Pic)

Full length down-filled zip baffle with anti-snap detail to stop draughts and heat loss.



LOOP RING (pic)

Fastens the top of the bag, enabling ventilation without heat loss to the core body areas; head, chest & shoulders.



FOOT PLUG / HANG LOOPS (Pic)

Multi-channel plug foot enhances warmth and comfort. Sewn in nylon hang loops for storage and airing.



VELCRO STRAP

Fastens the top of the bag; safeguarding the zip and enabling ventilation without heat loss to the core body area: head, chest and shoulders.



Tafleburg, South Africa, a very cold place.
Credit: Geoff Kirk

DOWN JACKET Features

DRAWCORDS

Waist and/or hem draw cords are invaluable for retaining trapped warm air and for keeping draughts out.

SNUG COLLAR

Fleece lined for comfort.

RE-INFORCEMENT

Jackets for climbing and skiing should have extra reinforcement at key wear points such as cuffs, elbows and shoulders. (Spandura® is an excellent stretch Cordura).



Julie-Ann Clyma high on K2

ZIP

Most jackets have a full-length two-way zip. Ensure there is at least one zip baffle (preferably two) to keep cold draughts out and warm air in.

POCKETS

Hand warmer pockets are a must. Some garments also come with internal and map pockets. This is all personal choice.

HOOD

When it's really cold, a down hood is well worth the extra weight and expense as 70% of heat loss is through the head.

CUT & FIT

Ensure a reasonably close fit to maximise insulation. A good long length is preferred by many to provide extra protection to the lum-

RECOMMENDATIONS

Find out about after sales service before purchasing an expensive product. Down products need care and so this is important.

If in doubt as to which weight of sleeping bag to buy, go for the warmer one, especially if you sleep cold. Use a sleeping bag liner to avoid expensive laundry bills. Rab recommend that Down Jackets and Sleeping bags are professionally cleaned. Franklins (Sheffield) Ltd. 0114 2686161 offer an excellent service (£27.25 inclusive).

Store down jackets and sleeping bags uncompressed in a cool, dry area away from direct sunlight. Always purchase from a reputable, specialist outdoor retailer who should have lots of advice and a wide choice.

ANTARCTICA

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