

# Ski and Snowboard - Equipment Information

*Below is equipment information concerning anything you may need on our winter ski and snowboard touring trips. Please see your particular trips gear list to know what is required for your trip. To help with your selection we have collated some notes which may help you save time and money.*

## **Clothing: Outer and Mid-layers**

### ***Waterproof jacket and trousers***

Waterproof jackets and trousers should be lightweight without any excessive features, mesh or insulating lining which will be hot and heavy.

Waterproof fabrics are usually a sandwich of an outer layer providing strength and an inner membrane that provides water resistance and breathability. Membranes stop liquid water but allow water vapour or sweat to pass through. Many brands of membrane are available with similar performance (such as Gore Tex® or Event®). The outer layer will have a water repellent treatment that prevents it from becoming saturated and compromising the breathability of the membrane. Waterproof clothing should have tape sealed seams

Waterproof clothing must be cared for to prolong their performance. This requires regular washing and tumble drying or ironing to reactivate the water repellent treatment. Refer to the manufacturer's instructions.

Technical mountaineering jackets are ideal but many general-purpose jackets are sufficient. Features include a suitable length to get tucked snugly into a harness, pockets that don't interfere with the harness, a full front zip and an attached hood that fits over a helmet.

Waterproof trousers must have side zips down the legs so they can be put on and taken off whilst wearing boots and crampons. Make sure they have sufficient movement to enable you to lift your legs high. These are often not required with good softshell trousers.

### ***Insulated jacket***

A good insulating layer for breaks stopped, belaying or at the hut or camp in the evening. It should have a full front zip and a hood is useful. Slightly oversized can be good to fit over the active layer (waterproof or windproof). Synthetic fill insulation (such as Primaloft®) is best as it maintains its performance even when wet though many water resistant natural down jackets are now also available.

### ***Trousers***

Softshell materials are best in winter to keep out wind and snow and with a good pair, waterproof over trousers are only required for wetter (warmer conditions). During particularly cold conditions, thermal leggings can be layered underneath. High waists, bibs or braces are good for keeping out snow.

**Clothing: Outer and Mid-layers cont.*****Mid layers***

A lightweight midlayer can provide insulation and some degree of weather-proofness. This can be a fleece (100-200 Polartec®) or wind resistant materials. Wool is heavier and takes longer to dry.

Softshell jackets provide good durability and weather resistance in cold conditions but can be too warm and bulky going into spring.

**Clothing: Base layers*****Underwear***

Quick drying or wicking 'sports' underwear are most comfortable

***Top***

High zip neck, long sleeve synthetic or merino (wool) baselayer. Merino materials have reduced odour on multi-day trips and perform well in dry cold conditions.

***Leggings***

Synthetic or merino leggings are lightweight and provide additional warmth if worn under outer trousers or to wear around the hut or sleeping.

**Hands and head*****Warm gloves***

Good quality warm gloves are essential at all times. Gloves need to be windproof and well insulated and leather palms provide the best grip, longevity and dexterity. Waterproof gloves are significantly more expensive and not necessary. Totally leather gloves are heavier and can be slower to dry out.

Mittens are useful as a backup or for warming up whilst stopped.

***Light gloves***

Light gloves are useful for climbing or other activities where more dexterity is required. Thinner gloves makes it more efficient to grip tools and work with protection whilst climbing. These can be dedicated climbing or even cheap workers 'work' gloves (cold workers gloves are popular for ice and mixed climbing). Warm gloves or mittens can be kept warm inside the jacket or pockets and changed into whilst stopped.

***Warm hat***

Either wool or fleece, must extend over the ears and fit under a helmet.

***Neck gaiter***

A fleece or Buff® neck gaiter are a useful item for keeping warm and keeping out drafts.

***Sunhat***

Even in winter the sun can be strong. A baseball style cap works best under a helmet.

## Feet

### ***Ski boots***

Regular downhill ski boots that are used on a ski field can be used for touring. Dedicated modern Alpine Touring boots are significantly lighter and offer similar ski performance to downhill boots. Good AT ski boots are perhaps the most important item of equipment. Ill fitting, uncomfortable and heavy boots are the most common trip spoiler we see. The boot is also the direct interface with your skis, without a good fit you will not get the optimum performance and enjoyment from your skis.

### ***Snowboard boots***

Regular snowboard boots are fine for touring with snowshoes or splitboards. For more technical ski mountaineering objectives, dedicated snowboard mountaineering boots are available that offer a stiffer sole and work better with crampons, especially when front pointing.

### ***Socks***

Ski socks should be close fitting and thin. The insulation and comfort comes from a well fitted ski boot liner rather than a sock.

### ***Approach/ hut shoes***

Lightweight approach shoes or running trainers are handy for in and around the hut to get a break from mountaineering boots. Alternatively hut booties or sandals (such as Crocs®) are a popular option.

## Ski touring equipment

All touring equipment has the common ability that pivots the boots at the toe and allows the heel to lift for efficient uphill travel.

### ***Alpine Touring (AT) skis and bindings***

Frame bindings are generally cheaper but do not match pin or tech bindings in terms of reliability, performance and, most significantly, lightweightness. Tech bindings might take a bit of getting used to but once mastered, they are simple and easy to use.

With modern lightweight, AT boots and bindings you can easily get away with a heavier, less expensive and (most importantly) good performing ski. The lightest skis (that also tend to be more expensive and have narrower waists) will not always perform well in variable NZ backcountry snow conditions. An all mountain ski with an intermediate waist width (95-110 mm) is best for snow conditions expected in NZ.

### ***Splitboards***

Splitboard technology has developed rapidly over the last few years and are now a reasonable method of backcountry travel. Modern splitboards will perform similar to normal snowboards downhill but can be split in two to go uphill similar to being on skis. The bindings can be time consuming to change between uphill and downhill modes so some practice before the trip is recommended.

### ***Snowshoes***

Although snowshoes are a cheap and easy way to get into backcountry touring, our experience is that travel is much less efficient than on splitboard or AT ski gear. On snowshoes travel in either soft or firmer snow conditions will be more tiring and you can expect not to be able to travel as far or be able to cover as steep terrain as comfortably as with AT gear or splitboards.

## **Ski Touring Equipment cont.**

### ***Ski/Splitboard crampons***

Snowboard boots do not offer much lateral ankle support and Splitboards do not have the stiffness, length or edging ability of skis.

Splitboards therefore do not perform well in firm or icy conditions that can be experienced at any point during winter. **Splitboard crampons are therefore essential equipment for all trips.**

Ski crampons improve the security of AT skis in firm conditions and are highly recommended throughout winter. **Ski crampons are essential for glacier or spring (late August onwards) touring trips.**

Ski or splitboard crampons are specific to bindings types and models and so are best off being sourced in advance of a trip.

### ***Skins***

For traction uphill on AT gear or splitboards 'skins' are stuck to the bases. These allow sliding movement in one direction but grip in the other. Modern skins are made from nylon but traditionally were made from seal skin. They are trimmed to the ski and so are somewhat specific to the equipment being used.

### ***Ski poles***

Ski (or trekking) poles are required for uphill travel. For snowboard touring, poles need to be collapsible so they will fit in or onto your pack when travelling downhill.

### ***Avalanche transceiver***

Avalanche transceivers are essential avalanche safety equipment. All modern transceivers operate on the same frequency. Being well practiced with your own, familiar transceiver is one of the most critical requirements for successfully rescuing your partner in the event of being caught in an avalanche.

### ***Avalanche shovel and probe***

Shovel and probe are also essential and also useful for camping in the snow. 2 to 3 metre probes are most commonly used in NZ. Shovels must be strong and durable in order to be effective for digging in hard avalanche debris. Lightweight models often fall short in this respect.

### ***Helmet***

Helmets are recommended for ski and snowboard touring but depending on the terrain are not always deemed necessary. Dedicated ski helmets are often too warm for wearing uphill so need to be carried in or on your pack.

Lightweight climbing helmets are designed to deflect falling ice and rocks and protect the head in case of a fall but do provide some protection for touring. Advantages are that they are lighter and more ventilated than ski helmets.

## Ski Mountaineering Equipment

### **Crampons**

For general mountaineering, crampons with horizontally aligned front-points work best as they are less prone to slice down through softer ice and consolidated snow likely encountered in spring and summer.

While general mountaineering crampons can be used for ice and mixed climbing, specialist crampons with vertically aligned front-points are good for more technical objectives. Vertical front points penetrate harder ice easier with less shattering.

The crampon binding system must be compatible with the ski or snowboard boots. Step-in (also known as clip on or fully automatic) crampons or hybrid (also known as semi-automatic with a heel clip and toe strap) bindings systems work with most ski boots. Strap on crampons are the only binding system that will work with normal snowboard boots and don't work very well when front-point climbing.

Due to the variable NZ snow conditions, all crampons must have anti-balling plates.

### **Ice axe**

For general mountaineering, a straight shafted walking axe between 60 cm to 80 cm long is required. A longer tool is more helpful on moderate ground and even the most difficult climbs have approaches and descents for which this is helpful. Walking axes will have a 'classic' shaped curved pick that is ideal for self arresting.

### **Harness**

For general mountaineering, a lightweight, specially designed alpine harness is easier to

### **Carabiners**

Pear or HMS shaped carabiners are useful for a wider variety of situations associated with mountaineering. A dedicated 'triple-action' or secondary gated carabiner is useful for the belay loop of the harness for belaying and clipping into the rope.

### **Ice screws**

Ice screws must have an articulated handle to make it easier to screw them in or out. This is an important piece of safety equipment whenever on glaciers, even if no steep ice climbing is anticipated. In good ice, longer screws aren't actually stronger so 16 cm - 19 cm screw is sufficient.

### **Prusik loops**

At least one long ( 2 m loop length) and one short (60cm loop length) are required for glacier travel and rescue. They can be made from inexpensive 6mm chord, joined into a loop with a double fisherman's knot. When using thinner ropes, a smaller diameter cord may be required. The cheapest and most useful bit of kit that is carried.

### **Slings**

A number of slings made from either nylon or Dyneema® with a 120cm loop length are useful when mountaineering and winter climbing. These can be sewn or tied (nylon only).

### **Crevasse rescue equipment**

Specific items of crevasse rescue equipment such as lightweight pulleys or progression capture devices (such as the Petzl Micro Traxion®) make the job of rescue significantly easier and have other rescue applications.

get in and out of over boots and crampons and  
packs down small for the walk out.

## Accessories

### **Water bottle**

Have capacity to carry 2 litres of water on an ascent. Bladder systems (such as Camelback® or Platypus®) are useful but can freeze in cold conditions or get damaged and don't fit well in a stuffed pack. Wide mouth plastic bottles (such as Nalgene®) are useful for filling from streams and can handle boiling water so can be used for hot drinks on the go and as a hot water bottle at night. PET bottles that come with bottled water or fizzy drinks are cheap, light and crushable.

In winter an insulated flask is useful for carrying hot drinks or a Jetboil® type stove is great for melting snow and making hot drinks quickly whilst out and about.

### **Compass, map, notebook and pencil**

Compass and map are important navigational tools. Ensure your compass is suitable for the Southern Hemisphere. Notebook and pencil is useful for taking notes on techniques, routes, conditions and weather.

### **Sun glasses**

Are necessary for most trips in the mountains and must provide good UV protection with a close fitting wraparound or glacier style. Any outdoor eyewear carries a rating, Category 3 and 4 lenses are ideal for High Alpine trips above the snowline and are a good investment if you are planning on spending a lot of time in the alpine. Polarized lenses don't increase the protection but remove the glare from surfaces (such as water) that can make it more difficult to differentiate snow from ice.

### **Snow goggles**

Goggles are an essential safety item. In stormy weather it can be impossible to navigate without proper eye protection. They can be used as a backup in case sunglasses are lost or damaged. A low light orange/yellow lense is best.

### **Headlamp**

LED headlamps are vital for nocturnal toileting and short winter daylight hours. Start the trip with fresh batteries and bring spare in case it gets left on in the pack.

### **Sun block**

A small bottle of high protection sunblock and lip protection is required for the strong NZ sun even in the depths of winter.

### **Snow study kit**

If interested in snow science a snow study kit containing a digital stem thermometer, magnification glass (loup) and snow crystal card is a good addition to your kit.

## Sleeping and carrying

### **Backpack**

A suitable backpack for touring in NZ has 35 to 50 litre capacity. It must have appropriate straps for carrying skis or snowboards (or ice axes for mountaineering trips). Winter packs with dedicated avalanche tool pockets are useful for keeping this equipment accessible and separated from dry gear.

On fly in and out trips a duffle bag for overnight equipment and a smaller day pack is a good option.

### **Stuff or dry bags**

Lightweight nylon bags with draw cords or dry bags with roll tops are good for keeping stuff in your pack organised and dry.

### **Sleeping bag**

For use in huts without sleeping bags a mid weight sleeping bag rated to -5°C (23°F) is usually fine. If you are a 'cold' person, camping or bivvying out, go slightly warmer to -10°C (14°F). Additional warmth can come from wearing more clothing inside the bag. Down fill has a better weight to warmth ratio but many modern synthetic fill materials are getting very close. Synthetic material has the advantage of staying warm when wet so good in damper conditions such as when snow caving.

Silk or cotton liners are recommended to prolong the life of your sleeping bag

### **Plastic bowl, cup & spoon**

Most huts have a supply of cooking utensils, cutlery and crockery. If camping or bivvying, a lightweight plastic cup, bowl and spoon is required.

### **Bivvy bag**

A bivvy bag is a lightweight bag to put a sleeping bag inside to give it more weather protection when spending the night bivvying out. They are usually much lighter than a tent but not as good in bad weather and handy to have in an emergency. They are only required if the conditions are conducive to sleeping out.

### **Sleeping pad**

Most huts have mattresses and sleeping pads do not need to be carried unless camping or bivvying.

Inflatable mattresses (such as Thermarest®) are most comfortable and provide superior insulation properties. They can puncture so a repair kit must be carried. Closed-cell foam mats are reliable and cheap and can be layered under an inflatable mattress to protect it from sharp rocks or to give more insulation when sleeping on snow.

### **Toiletries**

Toiletries should be minimised as much as possible. There is little opportunity for washing with soap in the high mountains and can be a drain on resources. Your guide will carry a comprehensive first aid kit for emergencies but personal medications such as blister tape, anti inflammatories etc. is useful (Please inform your guide if you are on prescription medication).

A towel is useful for nights spent in town and after arriving back from the mountains.

### **Ear plugs**

Huts are communal places so For light sleepers ear plugs can be a great help!

**Please check the equipment list for your particular trip**