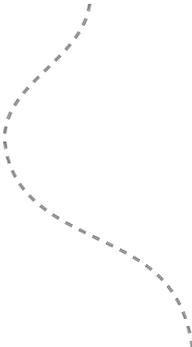


## GUIDE TO EQUIPMENT AND CLOTHING GEAR FOR MOUNTAINEERING IN NEW ZEALAND



This document provides advice on choosing the right clothing and gear for your Alpine Guides mountain trip. Refer to your trips' **"Equipment Checklist"** to find the exact gear you need.



Use the information here as a guide only. We run a range of programs that vary in duration and emphasis. If you are not sure if your gear is right for the job, please contact us



**alpine guides**  
Aoraki • Mount Cook

# GUIDE TO EQUIPMENT AND CLOTHING

## GEAR FOR MOUNTAINEERING IN NEW ZEALAND

### INDEX PAGE



[How to Dress | Gear for Different Seasons](#)

[Clothing | Layering, Thermals, and Fabrics](#)

[Outer layer: Jackets & Overtrousers](#)

[Hats, Gloves, Socks, Gaiters, and other items](#)

[Boots and Footwear](#)

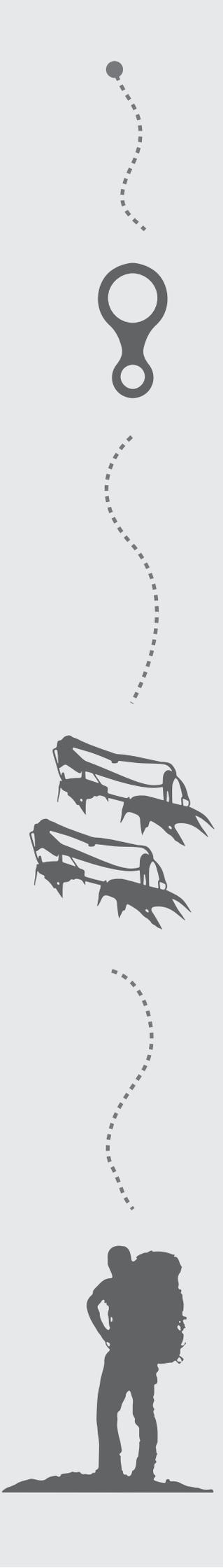
[Technical Hardware | Crampons, Ice Axes, and more](#)

[Sleeping Essentials | Sleeping bags, Bivouac bags](#)

[Touring Gear: Skis, Boots, & Snowboards](#)

[Miscellaneous Gear - Everything else](#)





## How to Dress | Gear for Different Seasons

Choose your mountain wardrobe around the time of year you will visit. Mountain huts are not heated. Temperatures are colder at night, even during summer. If your trip involves camping out, go for the warmest possible combination of clothing.

### Winter Gear (July - October)

Choose:

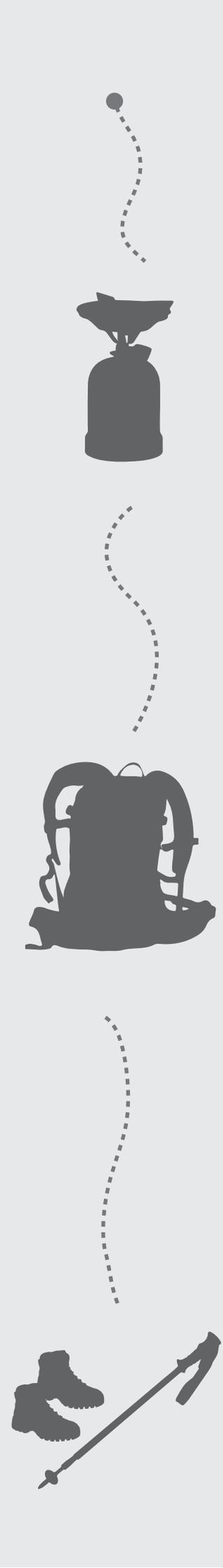
- Warmer down (500+ loft) and synthetic jackets
- Medium to heavy grade thermals and socks
- Warm, insulated gloves
- 4-season sleeping bags (rated to approx  $-12^{\circ}\text{C}$ )
- Avoid using drinking bladders and hoses during winter - they are prone to freeze even when insulated.

### Summer Gear (November - April)

There is a wide range of temperatures through summer. Be prepared for cool, to cold temperatures during storms and at night. Choose:

- 3-season sleeping bags (rated to approx  $-5^{\circ}\text{C}$ )
- 400-500 loft down jackets or synthetic insulating jackets
- Lightweight to mid-weight thermals and socks
- UV Protection is Vital

Through December, January and February especially bring "cooling" garments that will reflect UV. For example; glacier shirts (light colours/quick drying), legionnaire hats, scarves, and neck gaiters (e.g. "Buff").



## Clothing | Layering, Thermals, and Fabrics

This page describes the basic clothing layers needed: including soft-shell, thermal underwear and fleece, and the best fabrics for mountaineering in New Zealand.

### Layering your Clothing

The layered clothing approach (thermal - mid layer - shell layer) is best for mountaineering in the Southern Alps. NZ's temperate maritime climate delivers rapid changes in weather, and temperature - often inside the space of a day. Quickly adjusting clothing layers to suit weather and activity levels is essential.

Avoid cotton whenever possible, especially for layers close or next to the skin. Cotton absorbs moisture rapidly and dries slowly.

### Thermal Layer- against the skin

Your base/thermal layer should keep you warm, and just as importantly, wick moisture from perspiration away from the skin.

Polyester based fabrics dry fast and have good wicking qualities. They also last longer, and do not attract body odor like polypropylene ("polypro") fabrics.

Modern ultra fine Merino wool thermals are more popular. Merino will keep you warm even if damp. However, merino does not dry quickly and will absorb a lot of moisture (up to 5 times its own weight). We recommend polyester based fabrics for highly aerobic activities.

### Regular Underwear

Bring two changes of standard underwear. We recommend polyester, or even super-fine merino underwear to avoid cold clammy cotton undies!

## Thermal Underwear

Bring along:

- 2 long sleeved tops
- One pair of "long johns"
- For winter trips use heavier grade thermals, or 2 complete sets.

## Mid Layer: Insulation and wind protection

These items provide warmth, and to some extent protection from wind and moisture. Most mountain huts in NZ are not heated. Even during summer warm clothing for cool night temperatures is important.

## Mid-weight tops | Fleece sweater | Wind-shells

A warm layer, worn as jersey over your thermals. Choose 100-200 weight micro-polar fleece or heavier grade Merino garments.

Alternatives are wind-shells, lightweight micro polyester multi sport jackets, with a micro fleece lining. Wind-shells have advantages over standard polar fleece by cutting wind chill.

## Soft-shell Jackets

Soft-shell garments offer excellent wind protection, breath-ability, resilience, and range of movement. These are worn over your fleece jersey or thermals. Different weights of soft-shell are available to suit the season of your trip.

## Climbing trousers: including Soft Shell pants /Trekking Pants/ Fleece Pants

Your "climbing trousers" should be comfortable and able to fit over your thermal layer if necessary. Choose a lightweight, quick-drying synthetic fabric. Make sure they allow for easy movement, whether loose or tighter fitting.



Trekking pants over thermal long johns are okay during summer. These should be a light colour to minimise UV absorption. The classic Kiwi summer tramping garb is a pair of shorts, worn over striped polypro long johns - ugly but utilitarian.

Soft-shell fabrics are the most versatile option. They allow great range of movement, wind resistance and are quick drying. **With soft-shell pants you can do away with long johns when in milder temperatures, but most people will bring long johns regardless.**

In winter, or during early season you can use fleece trousers/waterproof over-trouser or a soft shell/long johns combination.

## Outer Layer: Jackets & Over-trousers

Polar fleece is durable, insulating, and quick drying. During summer a 200-300 weight polar fleece jacket is ideal for extra warmth. Choose a jacket with full-length front zip and zip pockets. Wear under your hard-shell jacket in windy conditions

**Cons:** Fleece is relatively bulky and does not compress well. Offers little resistance to wind.

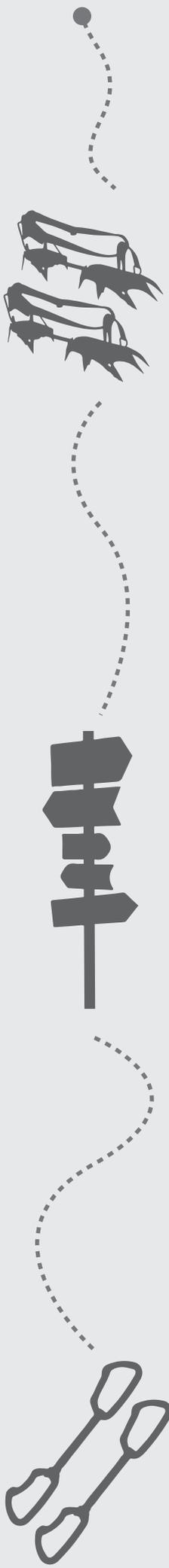
### Down Insulated Jackets

A down jacket is a good choice for warmth. This will pack down to a more compact bundle.

For winter trips a mid-weight (600+ loft) down jacket is recommended

- During summer a fill rating of 400 - 500 loft is sufficient
- During January and February for hut-based trips a down jacket is optional (but recommended)

**Cons:** Down offers no thermal protection when wet. Choosing a jacket with a water-resistant outer shell is better for damp conditions.



## Synthetic Insulated Jackets

Increasing popular are 'synthetic down' insulated jackets. These use man-made fibres like PrimaLoft®. The advantage of synthetic jackets is insulation, without the "puff" feel. Synthetic fill is cheaper, and will also keep you warm even when damp environments.

**Cons:** may be bulkier and slightly heavier than down

## Shell Jackets and Pants | Waterproof-breathable

Waterproof/breathable fabrics are ideal for mountaineering. They work on a vapour pressure gradient through the fabric, aided by warm body temperatures and cold air temperatures.

Gore-tex® is the benchmark product, although there are many alternatives. You will usually wear your shell layer only in poor, or cold/windy conditions.

## Shell Jacket -also known as "hard-shell" jacket

Your jacket should fit comfortably over your base and mid-layer garments, with room to move freely.

Mountaineering jackets come to just below the waist, allowing easy access to your climbing harness.

Tramping/bush-walking jackets that come below the waist are acceptable. They can be tucked under your harness.

**Choose a jacket with:**

- Full length front zip
- A full sized hood - capable of wearing over a helmet
- Zipper flaps
- Storm cuffs

## Over-trousers

These must be fully waterproof. Full-length zippers are ideal as they allow the over-trousers to be put on/removed over boots and crampons. Pants with half-length leg zippers will suffice, if you already own a pair.

Salopettes (bib-fronted trousers) add extra warmth for winter mountain missions. However the standard trouser style is lighter, cooler, and better for summer mountaineering.

## Hats, gloves, socks, gaiters, and other items

Solar radiation is particularly intense in NZ. Pay attention to covering up your sensitive parts from the sun.

### Peaked Cap

Worn for protection from the sun, and glare off the snow. Legionnaire-style hats are ideal as they protect the back of the neck and ears. A baseball cap and a bandanna/scarf/neck gaiter combination is a good alternative.

### Glacier Shirt

A glacier shirt is a highly recommended "old school" approach to stay cool on hot afternoons. Choose a light-weight quick-drying fabric, in a light colour, to help reflect snow glare.

Long sleeves and a collar help protect from sunburn. An old polyester business shirt will do, but where possible a shirt with an ultraviolet protection factor is recommended.

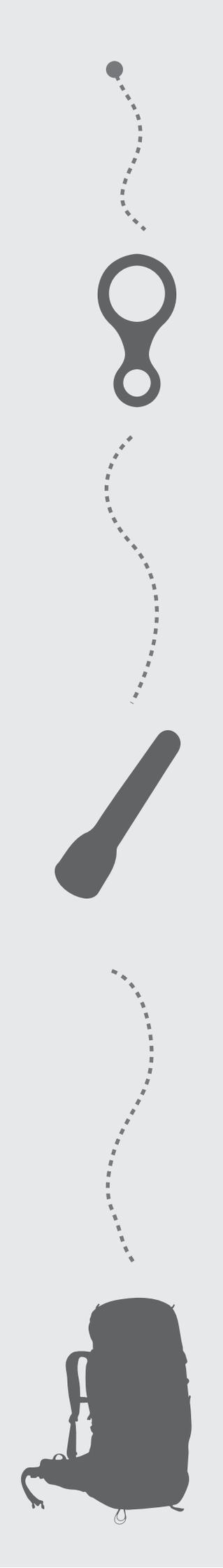
### Gloves & glove combinations

There are many possible combinations of gloves that suit different conditions, and your preferences. You will carry at least 2 pairs of different gloves with you at all times.

Avoid mittens. These are used at high-altitude especially on fixed rope systems, **but are not suitable for most NZ situations** - unless used just as a backup for warmth.

### Warm Hat & Balaclavas

Use quick drying materials e.g. polar fleece/polypro. Your hat/beanie should extend over your ears, and be snug enough to fit under your helmet. Balaclavas or close fitting hats under the helmet are ideal for extra insulation during cold weather/winter trips.



### Socks

Choose wool, or a synthetic/wool blend (e.g. "Coolmax®", for moisture wicking).

**Option 1:** bring 3 pairs of thicker socks. You wear one pair at a time, so one pair can be drying out as you wear another set.

**Option 2:** wear both a thin liner pair and a thicker pair of socks. If you use this combination, then bring just 2 thin pairs and 2 heavy pairs.

### Gaiters

Should be knee length and made of nylon, canvas, Gore-tex (or similar). Front velcro closures make them easier to get on and off.

Your gaiters should be secure fitting under the boot, so they don't ride up. Purchasing tip - it pays to try on gaiters while wearing your climbing boots. The gaiters we sell will fit over both plastic or leather mountaineering boots.

## Boots and footwear

**Boots are the single most important piece of equipment for the mountaineer. An uncomfortable pair of boots can ruin your mountaineering experience.**

You will only use one kind of boot on your mountain trip. It is not necessary to bring trekking boots in addition to mountaineering boots.

### Supplying your own boots

If supplying boots we ask that these are your own boots (not borrowed), unless fit has been determined and are well worn in before your trip. If you buy new boots for your trip try to get out for a few (serious) walks in them.

Buying a new pair of mountaineering boots can be a considerable investment. Purchase your boots from a reputable gear shop, where staff can give realistic, and first-hand advice.

If in doubt, rent a pair of our boots - this will give you a good idea of what to look for after your trip.



### Leather vs. Plastic boots

Most of our rental mountaineering boots are the plastic "shell" variety. We stock mainly Scarpa, La Sportiva and Asolo brands in various models and sizes.

Plastic boots cope well with the variable New Zealand snowpack, and rough treatment on glacial moraine. They also offer better support for front-pointing, and for technical snow/ice ascents.

Technical leather mountaineering boots are increasingly popular with climbers. They perform well in the Southern Alps during summer, when snowpack depth is reduced.

**Boots should be rigid, well waterproofed, and crampon compatible.**

Some brands to consider are: *La Sportiva, Scarpa, Asolo, Zamberlan, Salewa, Lowa and Millet.*

We are happy to offer advice on your boot purchase. Suitability for the purpose and the best fit are the most important points to consider before purchasing. We do not recommend buying boots online as you will not have the opportunity to get the right fit.



### Buy boots for the style of climbing you do

Choose leather boots for:

- Alpine rock
- Mixed climbing
- Alpine pass crossings
- Summer snow and ice climbing

Choose plastic boots for:

- Snow and ice climbing throughout the year
- Technical ice and alpine climbing (NZ Alpine Grade 4+)
- Occasional alpine rock routes
- High altitude mountaineering

### Boots for MEC, Winter Mountain Skills, Local Heroes, or any short (1-3 day) alpine trips

Flexible soled leather hiking/trekking boots are not suitable. The alpine environment demands more robust footwear. Your boot's soles need to be rigid enough to help keep your crampons securely fixed.





## Boot requirements

- Single layer leather mountaineering (alpine) boots
- Must have a rigid sole (fully-shanked)
- Well insulated
- Well waterproofed

Boots with a crampon attachment welt at the heel are ideal, but not required. Chose a boot with a generous rubber rand to reduce wear by rock abrasion.

## Boot models to consider

Any alpine boot similar to those listed below will work well.

Scarpa Manta Pro, Scarpa Rebel, Scarpa Charmoz, or similar  
La Sportiva Makalu, La Sportiva Karakorum, La Sportiva Trango S, or similar  
Asolo Aconcagua, Asolo Sherpa, Asolo Ascender, or similar

Contact us if you are considering a specific model of boot and have questions.

## Hut footwear

Bring a pair of lightweight footwear for using whilst in the hut. They will keep your feet warm, and allow your (plastic) boot inners dry out.

### Choose either:

- Crocs (Holey Soles)
- Running shoes (light-weight)
- Sandals
- Jandals (or "thongs")
- Polar fleece bivy boots

Whatever your choice, hut footwear needs to be as lightweight as possible.

## Technical Hardware | Crampons, Ice Axes, and more

### Crampons

For most trips choose a crampon for general purpose mountaineering. These should have 10 or ideally 12 points - which include moderate to aggressive front-points.

We recommend a crampon with a strap system on the toes, rather than a metal toe bail. Built in anti-balling plates are ideal for summer conditions in NZ. For example; Petzl Vasak, Grivel G12's, or similar.

Avoid specialised ice climbing crampons for general alpine mountaineering. These crampons can "ball up" badly with wet snow. Specialised "foot-fang" style crampons (e.g. Grivel Rambo) are ideal for water-ice climbing.

Strap-on crampons work well with snowboarding or non-rigid boots

### General Alpine Mountaineering Axes

A "straight shafted" mountaineering axe (55-65 cm) is appropriate for most climbing trips and instruction courses. The axe should have about 10cm ground clearance when held at your side.

The ideal length depends on your height, and the nature of the trip. These tools are best for "moderate" terrain, trips including glacier travel, and mixed climbing.

Look for an axe with a shaft without excessive rubber padding. This makes the axe easier to push into the snow for anchor placement. We recommend choosing an axe marked with "T" (for "technical") - these are rated for use in anchor systems

### Technical Ice Axes

These specialised shorter axes are designed for technical alpine routes and water-ice climbing. They have aggressively angled picks and often have bent shafts. Shaft length varies around 40-50 cm.





### Ice Hammers

Your hammer is used for placing snow and ice protection, and when climbing with "two tools" on steeper pitches.

This is a shorter tool than the ice axe, generally around 45-55 cm. Curved and aggressive pick shape (sometimes reverse-drop) is standard.

Both straight and curved shafted hammers have their place. Curved shafts protect the hands when ice climbing, but are not as efficient for hammering in snow anchors as straight-shafted tools.

### Ice screws

Ice screws vary in length from 12 to about 22 cm. Modern steel screw-in/screw-out are best. Winders are great for quickly placing and removing protection.

For general alpine mountaineering carry at least 2 ice screws per person. We recommend screws are at least 17 cm in length

### Helmets

A modern plastic climbing helmet will protect your head in the event of a fall, or more often, and specifically from objects falling on your head. They have a limited life span due to UV degradation.

### Karabiners

Locking karabiners should be large pear-shaped, ideally with a screw-gate. Snap-locks for general mountaineering should be "D" shaped, with a straight gate.

### Snow Stakes

Used in anchor systems. There two main options for the NZ snowpack: the 60 cm long aluminum angled "V" shaped or "T" shaped stakes. V-shaped stakes perform better in a softer snowpack T-shaped are better in a firmer snowpack (mid to late-summer)

### Harnesses

Your climbing harness should be lightweight with adjustable leg loops. Avoid heavily padded models specifically for rock climbing (especially with fixed leg loops).

Your harness needs to fit when you are wearing your storm gear (jacket and over-trousers). Choose a harness with plenty of gear loops.

## Sleeping Essentials | Sleeping bags, bivouac bags

### Sleeping Bags

Down, synthetic fill, or even mixed fill sleeping bags all work. Down bags are lighter and less bulky. The downside is that they take a long time to dry if they become damp.

#### *Summer (November- April)*

A "3-season bag" is suitable for comfortable sleeping at temperatures to -5°C. A down bag in this range will contain from 500 to 600 loft of fill. If bivouacs are planned for early (before mid December) or late summer (after mid-February) a 4-season sleeping bag is also suitable.

A sleeping bag liner, especially "thermal liners" can boost sleeping temperatures, and will help keep your bag clean.

Sleeping bags with a breathable water-resistant shell are ideal for short term bivouac/snow shelter situations, when used with a quality sleeping pad. They can do away with the need for a bivvy bag, except in very damp environments.

#### *Winter (July- October)*

Use a "4-season" bag, for temperatures down to -12°C. Spring hut-based trips may only need a 3-season bag (plus liner)

### Sleeping Pads

Only used on a bivouac or when snow camping. The huts we use have mattresses.

If you are on a course and want in to sleep in a snow shelter, please bring your sleeping mat. Choose a medium/lightweight Thermarest type, or closed-cell foam matt, 3/4 or full length.

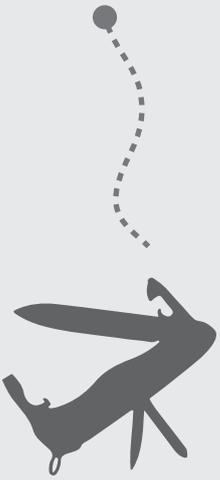
### Bivouac (bivvy) Bag

Not usually required - unless a bivouac is planned. If you enjoy sleeping in snow shelters or under the stars a bivouac bag is a good investment.

Some sort of emergency shelter should always be kept in your backpack - such as a plastic survival bag or a "bothy" bag.

Some models of bivvy bag have non-breathable portions of fabric (e.g. nylon). These are not recommended due to potential moisture build up.

[RETURN TO INDEX PAGE](#)





## Touring Gear | Skis, Boots, and Snowboards

With alpine ski touring gear (AT or randonnée) you can free your heel for ascending and traversing, and lock in your heel for the descent. Skins grip the snow surface helping prevent backwards travel.

### Ski Mountaineering Boots

Modern plastic shell touring boots are best for AT bindings. We mainly use Scarpa Denali's in our rental gear stock.

### Touring Skis

Choose "all mountain" skis, or skis designed for specifically touring. A "mid-fat" ski that measures 80-90 mm wide under foot gives good flotation in powder, and reasonable edging on hard snow. Bring ski crampons

### Bindings

Daimir, Dynafit, Marker, and Tyrolia all produce good touring bindings. Your bindings should include ski brakes and ski crampons.

### Skins

Must be cut fit the shape of the ski - trimmed in about 2mm from each edge.

### Snowboards & split-boards

Voile make good split-boards, but most snowboarders use a standard board with soft boots and lightweight snow shoes.

### Telemark

Telemark skiers are welcome on Alpine Guides trips, but you need to bring their own equipment. Due to the variable NZ snowpack ,we recommend that telemark skiers are very competent. If possible, try to source 'ski crampons' for telemark gear as AGL does not have any.



## Miscellaneous Mountaineering Gear

### Avalanche Probe

Should be collapsible, and minimum 2.8 metre length.

### Avalanche Transceiver

457 kHz is the international standard. We provide these when conditions require.

### Barometer/altimeter watch

Bring if you have one. They are useful for weather forecasting and navigation.

### Belay Device

We recommend the ATC-Guide from Black Diamond. This has a regular and high friction mode, great holding power and lowering capabilities. It also has auto-locking mode which is great for belaying directly off your anchor, or for use as an auto-block in rescue situations.

### Compass & GPS

Any reasonable quality compass, such as used for orienteering will do. Make sure it is balanced for this part of the globe. Bring your GPS if you wish.

### Drinking mug

There will be cups in the hut, but having your own mug is more hygienic. Lightweight thermal resistant plastic mugs (with lids) are best.

### Headlamp

For hands-free work you need a reliable light source. Headlamps with a combination halogen bulb and LED's are recommended. The bright bulb is needed for navigating. LED's are perfect for working, and reading at base. Using LED's gives longer battery life. Modern LED only headlamp technology offers brightness almost as good as a halogen bulb.



## Hydration systems

Avoid using bladder/hose systems during winter. You are welcome to use a bladder system in summer, but they can still freeze during colder weather. They are also prone to punctures from sharp climbing hardware. For longer trips, always carry a backup wide-mouth water bottle - just in case!

## Multi-tools

Useful for emergency repair jobs, especially if it has pliers. Look for Swiss army or Leatherman style tools.

## Prusiks

Prusiks are 5-6 mm width nylon kernmantle cord, or spectra. We recommend carrying 2 short and one long prusiks for most situations.

- A short prusik loop is "nose to navel" length when tied
- A long prusik "navel to ground" when tied

## Rock Protection

In general alpine climbing situations your guide will carry a small rack, but you are welcome to bring your own gear. At most bring 3 or 4 wires, and 1 or 2 small to medium cramming devices.

## Ski Goggles

Used in winter, and also in bad weather/flat light conditions during the summer months. A yellow lens offers best definition. We recommend having a pair of goggles. You may not use them often, but they are invaluable when really needed.

## Slings

You need at least 2 slings:

- "Long sling" is approx 4 metres before tying off
- "Short sling" is approx 3 metres before tying off

We use 16 to 20 mm width tubular tape in our rental stock. This resists abrasion well, especially when anchoring/belaying off alpine rock. If you bring your own slings (especially pre-stitched slings) 12mm tape will suffice. These should be rated to 22KN or better.



### Snow Shovel

Must be strong and lightweight, with a metal blade (usually an aluminium alloy). Models with detachable handles are recommended.



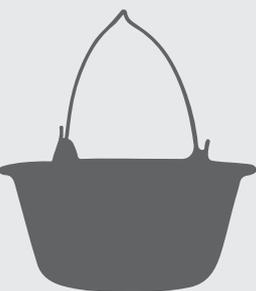
### Snow Study Kit

This includes a dial stem thermometer, magnifying lens, crystal grid, waterproof notebook, and pencil. Not essential, but useful if your focus is on avalanche safety.



### Sunglasses

Glare off the snow can seriously damage your eyes. Either mountain glasses (preferably with side shields) or high quality wrap-around sports sunglasses should be used. Your glasses must fit snugly and give 100% UV A, B, & C protection. We stock suitable glasses in our store.



### Survival Bag

If you do not have a Bivouac bag, a survival bag should always be carried for an emergency shelter. These are usually large durable plastic bags.



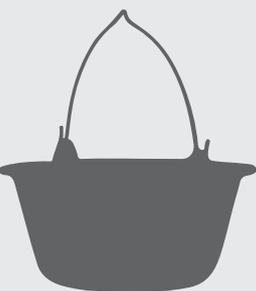
### Telescopic hiking poles

Help take strain off your knees when walking on rough terrain, or soft snow. Using one is recommended, especially for walking out of the mountains.



### Water Bottles

We recommend you carry a minimum of 2 litres water. 2 one litre bottles are ideal. Wide-neck bottles with 'unbreakable' materials (e.g. Nalgene®) are the preferred option. A combination of water bladder system, and 1 x one litre wide-mouth bottle is good for summer trips.



### Waterproof Pack Liner

A large durable plastic bag (one which doubles as an emergency bivvy bag) is ideal. Alternatively use one or 2 garbage bags for packing clothing inside your backpack.

