

SKI LAST DEGREE REQUIRED CLOTHING AND EQUIPMENT LIST



Conditions in Antarctica change drastically throughout our season and vary depending on your location. Temperatures can reach as low as -40°F (-40°C) and as high as 23°F (-5°C) and can feel colder due to the prevailing headwind and altitude.

To be prepared for all conditions, it is important to have a selection of items you can mix and match. Skiing while towing a sled generates heat and it is important to regulate your body temperature by selecting appropriate layers each day based on the conditions. It is crucial to prevent sweating, as your sweat will freeze and render your high tech clothing useless. Some days you will need more insulation than others, but in general a windproof outer layer and complete face protection are always necessary. The layering system described below will keep you safe and comfortable in all conditions – it is also the same system utilized by our Antarctic field staff.

Face, hands, feet, and thighs are especially vulnerable to cold injury. Pay particular attention when choosing boots, gloves, mitts and face/head coverings.

This list is broken up into two sections with photos and descriptions of the more technical items up front and the complete clothing and equipment checklist with required quantities at the back. The suggested items are examples of products that meet the recommended criteria. Use them to compare specifications with your existing equipment or to find equivalent products from manufacturers available where you live. It is essential that you have suitable equipment for this challenging expedition. If in doubt, please contact us for further advice.

Base Layers



Materials

Merino Wool or Polyester, NO COTTON

Examples

Patagonia, Icebreaker, Brynje, Aclima



Description

Your first layer consists of a long-sleeved top and bottom. We recommend merino wool or wool net. If you cannot wear wool, polyester is an alternate option. Do not bring cotton as it traps moisture and can cause you to chill more rapidly.

Make sure these items are loose fitting and not too tight.

Bring undergarments, sports bras, and/or camisoles in a similar wicking material. It will not be practicable to change underwear as often as you would at home so it is a good idea to test fabric options before your expedition. Try different options for a few days and pick the most comfortable.

Optional Bottom: Silk Leggings or Shorts

Silk leggings or shorts are an alternative option for your bottom base layer as they may reduce the likelihood of having chilblains and cold injury to the thighs.



Mid Layers



Materials

Merino Wool or Fleece

Examples

Patagonia R1-R3, Rab Power Stretch, Black Diamond CoEfficient, Mountain Equipment Eclipse Pant

Description

Your second layer consists of a long-sleeved heavyweight (expedition weight) base layer top and bottom or lightweight stretch fleece top and bottom. Tops with hoods and thumb holes are great as they seal the neck and wrists to keep you warmer. Pockets are also useful for keeping batteries warm.



Your third layer consists of a midweight fleece jacket. It should be a full-zip jacket but a hood is not essential. Multiple pockets are useful.

Alternate Bottom: Hiking/Trekking Pants

Also known as guide pants, a pair of lightweight pants with some stretch can be layered over your base layers when at Union Glacier Camp. But these are not essential for the Ski Last Degree expedition itself.



Windproof Layers



Materials

Windproof Shell with optional Fur Ruff

Examples

Bergans Antarctic Expedition Jacket and Antarctic Expedition Salopette, Mountain Equipment Polar Expedition Jacket and Salopette

Description

Next you will need a windproof jacket and pants. We recommend windproof softshells as they tend to be more breathable and more comfortable than waterproof hardshells. However, if you already own windproof hardshells (Gore-tex) or are bringing them for Vinson, these will also be suitable. Wind protection is the most important factor for this layer.



Your jacket should be long enough to keep your lower back warm, but it does not need to cover your thighs. It must have a generous hood but a fur ruff is optional. If you purchase a jacket without a ruff, you can buy and sew one to the inside edge of the hood. Wolverine is optimum but wolf, coyote, husky, or fox fur ruffs will also work. These are available from [Apocalypse Design](#), [Brenig](#), and [Wintergreen Northern Wear](#).

Your pants should have easy pull zippers for venting and full side zips. A drop seat pant design is vital for using the toilet if the pants have suspenders/braces or a salopette (bibs) design. The thighs are an area which is vulnerable to cold injury so avoid a tight fit and allow plenty of room for insulating layers underneath.

Special Note: Clothing that combines 'pile and pertex' insulation and windproofing in one garment is often marketed as being ideal for polar expeditions. However, the combination of the windproof outer layer and built-in insulation can be too hot at times and does not allow the user to regulate layers in varying conditions. It is therefore not recommended for Ski Last Degree expeditions.

Down Layers

You will need several down options to provide protection against the coldest and windiest Antarctic conditions. These items should all be sized to fit over your windproof layers.

Down Parka with Hood



Examples

Mountain Equipment Annapurna Jacket, Rab Neutrino Endurance Jacket

Description

Your parka does not need to be the warmest model available but should be expedition quality, rated -15°F (-26°C) and have a generous hood.

Down Vest



Examples

Patagonia Down Sweater Vest, Rab Microlight Down Vest

Down Pants



Examples

Western Mountaineering Flight Down Pant, Mountain Equipment Lightline Down Pant

Description

Your down pants should be very lightweight and not heavy 8000 meter pants.

Head

You will need several options to cover your head, neck, and face (mouth and nose) depending on the temperature, wind conditions, and sun exposure.

The face is especially vulnerable to cold injury on a Ski Last Degree expedition due to constant headwinds. Complete face protection is essential. The objective is to be able to ski into a freezing headwind with your face and head completely protected from the elements. Try combinations of balaclava, face mask, hat and goggles together to ensure that there are no gaps—often a crescent shape between the edge of goggle and a face mask or balaclava is hard to cover. **You must be able to breathe freely and moisture from your breath must be able to escape** (so that goggles do not fog).



Item 1:
Hat or Beanie that Covers Ears

Materials:
Wool or Fleece

Item 2:
Face Mask

Materials:
Neoprene



Item 3:
Neck Gaiter or Buff

Materials:
Fleece or Polyester Microfiber



Item 4:
Balaclava

Materials:
Power Stretch Fleece or
Windstopper

Eyes

Sunglasses and Hard Case



Materials

Non-metal frames with 100% UV protection

Examples

Julbo, Smith, Oakley

Description

Quality sunglasses are essential to prevent snow blindness. Look for side-flaps or a contoured shape to prevent light from entering at the sides and dark lenses. Avoid metal frames; they can freeze to your skin. Bring a hard case to protect them in your luggage.

Goggles



Materials

100% UV Protection

Examples

Julbo, Oakley, Smith, Abom

Description

Quality goggles are absolutely necessary while skiing to protect your eyes and face against wind and cold injury. You will need at least two pairs of goggles that you are comfortable wearing for long periods. Make sure each pair of goggles has a different lens tint or bring two identical goggle frames that use the same interchangeable lenses. Dark orange or rose colored lenses are recommended as they work in all light conditions. Goggles also need to have excellent venting as lens fogging is a common problem. If you wear prescription glasses, check to make sure your goggles fit over them comfortably and won't fog up inside the goggles.

On at least one pair of goggles we recommend sewing a piece of windproof fleece or neoprene underneath the nose to form a mask of material, covering your nose and face, that will provide additional protection in bad weather.

Hands

You will need a selection of gloves and mitts to protect your hands while performing a range of tasks from setting up tents and taking photos which require dexterity, to skiing and standing still which require insulation.

We recommend you bring gloves with wrist loops attached as many people take a glove or mitten off and lose it in the strong wind. Look for gloves that come with wrist loops or bring some elastic shock cord and your guide will show you how to make your own.

Thin Liner Gloves



Materials

Polyester, Merino Wool, or Silk

Examples

Seirus, Outdoor Research, Icebreaker

Description

Liner gloves can be layered under other gloves or mittens for additional warmth. They also protect you if you need to take off an outer glove or mitten in cold temperatures. Having two pairs allows you to switch out liners as they become damp.

Thinsulate Gloves



Materials

Thinsulate, Fleece, or Wool

Examples

Rossignol, Ortovox, Norrona

Description

These are the main gloves that you will ski in. You have the option of wearing them with or without the liner gloves. We recommend gloves that use a mix of Thinsulate and fleece for insulation.

Alternative Option: Wool Mittens

Your other option is to use wool mitts, usually called Dachstein Mitts. These are designed to be oversized and boiled to compress them into a tough, thick material.

Midweight Insulated Gloves



Materials

Waterproof Breathable or Leather with Built-in Insulation

Examples

Black Diamond Pursuit Gloves, Hestra Fält Guide Gloves

Description

It's useful to have a pair of midweight insulated alpine or work gloves that can be worn when setting up camp.

Thick Insulated Mittens



Materials

Synthetic or Down Insulation

Examples

Mountain Equipment Redline Mitten, Black Diamond Super Light Mitten, Marmot Expedition Mitten

Description

You will need one pair of mittens with a high level of insulation. Fully waterproof mountaineering mittens are not necessary as they tend to be stiffer and more bulky than what is needed for an Antarctic ski expedition. We recommend synthetic (Primaloft) insulated mittens.

Pogies



Description

We will provide you with ski pole pogies—insulated ski pole handle covers, like the insulated covers available for motorcycle handlebars. These provide wind protection and an additional layer of insulation to keep hands warm while skiing.

Feet

Thin Liner Socks



Materials

Wool, Polyester, or Silk—NO COTTON

Examples

Smartwool, Bridgedale, Thorlo, Darn Tough, Injinji

Description

Toe socks are a good option to reduce blisters on and in between toes.

Midweight Socks



Materials

Wool or Wool Blend Socks

Examples

Smartwool, Bridgedale

Description

These will be your primary ski socks.

Heavyweight Socks



Materials

Wool or Wool Blend Socks

Examples

Smartwool, Bridgedale, Thorlo, Darn Tough

Description

Warm socks are great to wear inside your tent.

Light Winter Boot or Heavy Hiking Boot



Materials

Waterproof Outer and Insulation

Examples

The North Face, Scarpa, Salomon

Description

On warmer days, you can often wear lighter weight winter boots or heavyweight hiking boots for many excursions around Union Glacier.

Optional Footwear: Trail Running Shoes and/or Tent Booties

It's nice to be able to take your boots off around camp and in your tent.

Sleeping

Sleeping Bag



Materials

Down

Examples

Feathered Friends Snow Goose Ex -40, Mountain Equipment Redline, Marmot CWM

Description

You'll need a down sleeping bag rated -40°F (-40°C). We recommend down as it is much lighter and will pack smaller than synthetic bags. Get a full body-length mummy bag with a generous hood and full length zip. A little spare space inside is useful to store water bottles, batteries, and other items you don't want to freeze.

Foam Mat



Materials

Closed Cell Foam

Examples

Therm-a-Rest RidgeRest Solar or Classic

Description

Full-length, closed cell foam mat with textured surface.

Inflatable Mattress



Materials

Nylon, Polyester, Down

Examples

Exped DownMat, Therm-a-Rest NeoAir All Season SV

Description

You'll need a full-length inflatable mattress. Look for the warmest model available and don't forget a repair kit!

Pee Bottle



Examples

Nalgene 32 or 48 oz Wide Mouth Water Bottle

Description

You will need your own container to urinate in. We recommend a wide mouth water bottle that is marked for urine or 'pee' and can be used at night in your tent or while en-route on expedition. When in Union Glacier, our staff will show you where to empty pee bottles behind the toilet facility. Once inside 89°S, use your pee bottle to collect urine while en-route and only empty it at communal pee holes at camp sites. At the South Pole and at ALE's South Pole Camp, all human waste MUST be collected and removed from the NGO camp.

SKI LAST DEGREE CHECKLIST

You must bring ALL of the items on this list unless they are listed as optional. We will look for each item on this list at your Gear Check in Punta Arenas. These items may not be available for purchase in Punta Arenas and we will not let you board the aircraft to Antarctica without them.

X	#	Item
Base Layers		
	3+ pairs	Underwear, sports bras, etc.
	2 pairs	Light or midweight bottoms
	2	Light or midweight tops
	<i>Optional</i>	Silk leggings or shorts
Mid Layers		
	1	Lightweight fleece top or expedition-weight base layer top
	1 pair	Lightweight fleece pants or expedition-weight base layer bottoms
	1	Midweight fleece jacket
	1 pair	Hiking/trekking pants
Windproof Layers		
	1	Windproof shell jacket with optional fur ruff attached to the hood
	1 pair	Windproof shell pants
Down Layers		
	1	Down parka with hood
	1	Down vest
	1 pair	Down pants
	<i>Optional</i>	Down skirt
Headwear		
	1	Wool or fleece hat that cover the ears
	2	Fleece neck gaiters or Buffs
	1	Neoprene face mask (can substitute for a balaclava with built-in face mask)
	1	Balaclava
	1	Wide brim or baseball hat for sunny weather
Eyewear		
	2 pairs	Goggles
	1 pair	Sunglasses
	1	Hard sunglass case
	<i>Optional</i>	Spare contact lenses or prescription glasses, if required
Gloves		
	2 pairs	Thin liner gloves
	2 pairs	Thinsulate gloves or wool mittens
	1 pair	Midweight insulated gloves
	1 pair	Thick insulated mittens
	10	Chemical hand warmers
	<i>Optional</i>	Elastic shock cord to make wrist loops for gloves

X	#	Item
Footwear		
	3 pairs	Thin liner socks
	3 pairs	Midweight socks
	2 pairs	Heavyweight socks
	1 pair	Lightweight winter boots or heavyweight hiking boots
	<i>Optional</i>	Vapor barrier socks
	<i>Optional</i>	Tent booties
	<i>Optional</i>	Running shoes
	<i>Optional</i>	Insoles/footbeds
	<i>Optional</i>	Intuition Mukluk Liner
Sleeping Equipment		
	1	Sleeping bag
	1	Full-length, closed cell foam mat
	1	Full-length inflatable mattress and repair kit
	1	Eyeshade or eye mask for sleeping in 24-hour daylight
	1 pair	Ear plugs
Luggage		
	1	Large lightweight duffel bag (avoid heavy bags like The North Face Base Camp Duffel)
	1	Carry-on backpack 18" x 16" x 10" (46cm x 41cm x 26cm)
	4-6	Stuff sacks of different colors to organize items in the sled and tent
Other Equipment		
	2	32-oz Nalgene wide-mouth water bottles (option to substitute one for a stainless steel thermos flask)
	1	32-oz or 48 oz Nalgene wide-mouth water bottle (marked for pee)
	2	Insulated covers for 32-oz Nalgene water bottles (Outdoor Research or Forty Below)
	1	Plastic insulated mug with lid with wide bottom
	1	Large lightweight non-breakable Lexan bowl or Fairshare Mug with lid
	1 set	Lexan cutlery
	1	4 fl oz pack of sunscreen with minimum SPF 50
	1	Lip balm with minimum SPF 50
	1	Watch with an alarm, new batteries, and a long wrist strap
	1	Sewing and repair kit with duct tape
	1	Personal toilet bag with pack towel, Wet Wipes, toothbrush, toothpaste, anti-bacterial gel, Band-Aids, blister kit, foot powder, lotion, contact lens solution, feminine products, etc.
	As needed	Personal medication. Bring enough for your expedition plus an additional 4 weeks' supply.
Optional Electronics		
	<i>Optional</i>	For Antarctica: USB or 120V A/C (North American Type A or B plugs) For Chile: Plug adapters and 220V transformers
	<i>Optional</i>	GPS
	<i>Optional</i>	Camera, memory cards, accessories, and case
	<i>Optional</i>	iPod or digital music player with two sets of headphones
	<i>Optional</i>	Mobile phone
	<i>Optional</i>	Batteries, chargers, adapters, and solar panels to support all of the devices you bring

X	#	Item
Other Optional Items		
	<i>Optional</i>	Lightweight journal, sketchbook, pencils, pen, e-reader
	<i>Optional</i>	Compass with global needle or weighted for the southern hemisphere
	<i>Optional</i>	Christmas and birthday treats and gifts
	<i>Optional</i>	Personal treats like candy bars, photos, favorite poem
	<i>Optional</i>	US cash to purchase satellite phone cards or merchandise at Union Glacier Camp
	<i>Optional</i>	Pee funnel for women (Freshette or Shewee)
	<i>Optional</i>	Handkerchiefs/bandanas
	<i>Optional</i>	Cotton t-shirts to wear at Union Glacier Camp