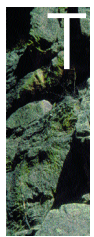




A pound on your feet (is worth five on your back)



The term 'hiking boots' as a category covers both ends of the outdoor footwear spectrum, from superlight, beefed up running shoes to Monobloc injection moulded PVC thermoplastic polyurethane boots. With more than 100 dedicated technical brands and numerous pretenders manufacturing on five continents, innovative designs and a willingness to introduce new materials and components comes naturally to this segment of the footwear market.

In footwear, the weight factor normally refers to the actual weight of the shoe or boot. In hiking, however, weight can also factor into choosing the correct footwear when one is carrying extra pounds or kilos on the back, as in back packing or trekking. It's a fact that two to three pounds (0.9-1.36 kg) of weight at the end of your leg corresponds to five times that weight carried on the upper body. However, if a trekker is carrying 45-75 pounds (20-34 kg) of camping equipment on a week-long trip over rocky terrain, the extra support and stability normally offered in a heavier boot more than compensates for actual weight saving in lighter footwear. Because there are so many classifications in the hiking category, most companies group hikers and their needs by considering the duration of the trip, the terrain and the loads carried.

1. The novice or an 'urban hiker' typically tackles between 2-10 miles (3.2-16 km), carries a fanny pack and may even prefer to jog the course or run it, as in the sport of orienteering. The type of shoe often preferred and most suitable for country ambles or scrambles has developed largely from running shoe technology. You can think of them as dark coloured rugged trainers built on running shoe lasts. These lightweights, in hiking standards, weigh in at around 12-14 ounces (approximately 350 gms). Upper materials follow traditional (as opposed to futuristic) running shoe nylons and meshes of the thicker denier variety. Cordura is another favourite.

One of the differences from running shoes is the importance of waterproofing. This is where Gore-Tex and similar membrane-based liners such as Dri-Lex and Sympatex Dry-Line are used

to offer the wearer a measure of protection and comfort from the more extreme elements encountered in marshy or damp terrain. A measure of protection in superlight outdoor models is achieved by adding a PVC or PU coating over the softer nylon materials. Typically synthetic leathers such as Clarino are preferred over genuine leather for their waterproofing qualities. Exoskeletal supports and strapping made from PU or polypropylene can be added for support and stability.

X-Hikers use the same type of midsole material as running footwear, either EVA (ethylene vinyl acetate) or PU, with a harder density being preferred to add more stability for cross-country and rocky terrain. Phylon is a special EVA composition that offers excellent resistance to compression. Nothing has yet replaced the reliability of SBR (styrene-butadiene rubber) or carbon rubber as an outsole material.

Much of the innovation and specialisation in outsoles of this type is in the design, where each brand offers a combination of improved features for traction, shock absorbency, flex path and ability to shed dirt and mud build-up. Garmont's Spine System 3D is a new introduction that seems to have captured the essence of hiking outsole innovation. Here's an edited description of its latest midsole-outsole combination as used on superlight to lightweight hiking boots. "Vertical perimeter ribs are just one feature that elevates the new Spine System 3D to the next dimension in the true transitional outdoor multi-activity footwear. These provide additional stability and decrease midsole deformation. Other stepped up features include a wishbone configuration at heel strike for stability and impact deflection, a box frame for midfoot stability and beefed up medial ribs for pronation control. Phylon midsole: initial contact is softened by a small lateral crush zone moulded into the heel strike area. Firm enough for stability, soft enough for comfort, the 3D edition of the R2 midsole is further stabilised by the nylon vertical winglets. Integral 3D Spine: modifications were made to enhance the original concept making it work better over a wider range of pace from trudging to running. An extended wishbone meets the ground to better disperse shock at heel strike. Midfoot, medial and lateral

Explorer Gore-Tex III - A hiking and backpacking classic with durably waterproof Gore-Tex construction. Exclusive Merrell Vibram Mutant sole provides traction and superb wet-dry grip.

braces construct a stabilising square beneath your instep. The entire length has beefed up ribs on the medial side to decrease pronation while still maintaining the independent action and the smooth and accommodating forefoot flex. Vibram/Garmont Transition Outsole: increased radius at heel strike and toe off areas augments shift from one pace to another and a smooth transition throughout the gait. Sharp edge lugs dig in soft surfaces and deform to edge into hard surfaces." (If one gets lost on the trail at least the 'beefed up ribs' can no doubt be cooked and served as a meal!)

Many specialised hiking brands such as Garmont, Vasque, Raichle, Salomon and La Sportiva now manufacture this category as part of their ranges; however, the initial product development was instigated by running shoe brands such as New Balance, Nike and Adidas in their running shoe technology. The construction used in this type of lightweight shoe is predominantly cemented.

2. Intermediate Hiking equates to a 1-2 day trip covering 6-10 miles a day (9-16 kilometres). This level of hiking normally requires a 'lightweight boot'. Most lightweight boots weigh in around 1.5-2 pounds (sample size 9 men). They are usually high-cut over the ankle with good flex and require little break-in time. Lightweights come in all leather or a combination of Cordura or the more recent high tech durable materials such as eVENT and leather. Specialised linings such as Dri-Lex or Dry-Line for moisture control and Thinsulate for additional warmth are often featured. Commonly, a rubber or soft nylon foxing, or rand as it is called on hiking boots, is added around the boot for protection. Flexibility is important in lightweight boots as is breathability and comfort. Padded top-lines in soft nappa leather or synthetic PU leathers are a comfort feature. Waterproofing membranes such as Gore-Tex are also popular throughout this category.

Midsoles start to become more sturdy with the introduction of firmer density PU or MCR (micro-cellular rubber) as well as one-piece unit rubber soles. Wedge soles have become increasingly popular, offering the intermediate hiker a flatter more stable walking surface over rough ground and negating the need to use a metal shank which is essential in soles with a heel.

Outsole features can be interesting. Vibram is close to a generic category name in hiking footwear. Vitale Bramani, the founder of the famous hiking sole, was himself a serious Alpine climber. The first syllables of his first and last name make up the brand.

3. Midweight Boots - are used when a hiker starts trekking over more rugged, mountainous terrain and carries additional weight for overnight camping. Weights carried on the back move into the 30 lbs. plus class (over 13 kg) and boot weight also needs to reflect the additional support and stability over serious distances.



Returning to outsole features for lightweight boots: midweight boots are distinctly more technical than lightweights. Serious hikers demand the advantages of good design and quality materials. Dedicated hiking boot companies such as Merrell, Garmont and Boreal, consider every aspect, even on the outsole design, to include push off and braking areas, stability-outrigger appendages, depth and shape of lugs, flex lines, self cleaning injection grooves, smooth convex areas for self-cleaning and multi-directional lugs for maximum traction. Midsoles used on this grade of boot are normally rubber or PU as opposed to EVA (which, despite recent improvements, still takes more of compression set over time under load). Garmont is one brand which offers an anatomical midsole for greater comfort and shock absorbency. Most brands will offer a full-length Pebax nylon footbed with softer foam insets such as Poron or Sorbothane across the forefoot and at heel strike.

Oil treated full grain or reversed leather between 2-3 millimetres in thickness is preferred by most brands. Merrell uses 2.6mm Gallusser of Switzerland waterproof top grain, which is waterproof and abrasion-resistant for increased durability. In more technical models, such as Merrell's Quattro, features such as a combination double bellows tongue and a silicone moulded retaining wall (rand) add strength and protection as boot weight moves into the 3lb category. To relieve the weight factor, Merrell incorporates Schoeller's Keprotec Kevlar mesh panels in high-abrasion areas.

4. Heavy weight boots as a footwear term is only accepted as a grade of hiking boot. In all other categories of performance shoes, the word 'heavy' is definitely not a desirable feature. We are describing boots used and required only by serious long distance hikers for carrying a lot of weight (try 75 lbs) in often wet, icy and cold conditions over rough mountainous terrain. For a week or more in the Alps, the Appalachian Trail or on the Continental Divide, these boots would be worth their weight in gold. Well, they're not that heavy - but they can weigh up to 5-7 lbs.

Chameleon Rush by Merrell provide flexibility and stability. They feature a breathable mesh lining, a Lycra Neoprene combination stretch collar, adjustable clip closures and moulded flying bridge.



apiece (up to more than 3 kg). The major weight factor in heavy grade boots is the height of the shaft, which increases up to the calf for total lower leg support, and the thickness of the materials. Surprisingly, many specialised Alpine boot makers still use 3-4 mm. leather as a substantial component in the manufacturing of heavy grade uppers. The leather may be full grain or nubuck, usually silicone treated or specially tanned with an oil impregnation, such as 3mm Perwanger "Nepal" waterproof reverse full grain leather. In this grade of boot, the lining must be soft glove leather or a Gore-Tex fabric bootie construction for waterproof/breathable performance or similar.

Midsoles are thicker (at least 6-10 mm) and usually made from stronger materials such as MCR rubber, leather or even wood. If PU is used as a midsole material, it may be moulded with a rand into a single unit to stabilise the foot on rough terrain. Outsoles must be thicker, too, in order to give adequate support and insulation in freezing mountainous conditions. Specialised brand name outsoles such as Vibram's Clusaz/Trek rubber outsoles are also crampon-compatible and offer sufficient insulation to keep the feet warm.

Insoles are an important component in heavy grade hiking boot construction. A high-grade technical boot, such as Merrell's High Cascade uses an 8mm nylon grade 8 insole with moulded 2mm steel shank. Holding all these components together may require more than just cement. Traditional boots use Goodyear or Norwegian welt construction.

Another type of high-tech boot is available on the market for long distance mountain hiking. Similar to a fully moulded ski boot, a modern styled thermoplastic polyurethane boot is integrated with a leather shaft and Gore-Tex inner bootie. The outsole is, however, traditional rubber for durability and traction. Ski boot specialists such as Nordica continue to pioneer this type of modern construction in hiking boots.

Because of the stiffness in heavy grade boots, the wearer must allow for adequate break-in time before embarking on an extensive excursion. In other words - wait again is a factor! Wait to break in the boot, weight as carried on the body in the form of equipment and the correct weight of boot for enjoyable hiking - whether a couple of hours around the park, a couple of days on the trail or a couple of weeks in the Rockies. 🏔️

Mel Cheskin



Merrell's High Cascade boot is tough and durable making it ideal for a wide range of mountain conditions and rough terrain. Sharply lugged, crampon-compatible Vibram® Ice Trek sole provides excellent traction. Waterproof Perwanger leather upper has eight-eyelet, lace-to-toe cinching with extra overlays at toe and studded protection at Achilles.