

The Alpine Rock Handbook

Gear Chapter

A beginner's guide to your first real rock routes

Written by @domtheclimber

BEFORE YOU READ ON

Climbing is an inherently dangerous sport, and no amount of reading removes that.

This is a reference, not a course. It describes how alpine rock is taught to the German standard and how I teach it; it does not teach you.

Technique on a page and technique under load are different things, and the gap between them closes with a qualified instructor watching you tie the knot, build the anchor, and load the system, not with a PDF. Nothing here is binding advice or a professional recommendation for your specific situation. Where this material differs from your manufacturer's instructions for use, from a certified instructor standing in front of you, or from your own judgement on the day, those win, in that order.

Everything you do with this material you do on your own responsibility, at your own risk, and with your own consequences.

Get proper training. Then go climbing.

BEFORE YOU BUY ANYTHING

I teach this regularly to beginners. So instead of telling you what to buy, this chapter tells you what each piece of gear actually does, what matters when you take it from the gym onto real rock, and, the part almost nobody covers, how each piece fails. Once you understand that, the buying decisions make themselves.

A FEW GROUND RULES BEFORE WE START:

Safety-critical gear is regulated. In Europe, anything that catches a fall is classed as personal protective equipment and has to meet a binding EN standard. There's also the UIAA label, which is voluntary and usually sets the bar a notch higher than the legal minimum. When you see "EN 892" or a UIAA stamp on a rope, that's not marketing, it's a tested minimum. Buy gear that carries it. Ignore gear that doesn't.

A norm is a floor, not a grade. A standard certifies that a piece won't fail under a defined test. It does not tell you the piece is right for what you're doing, or that you're using it correctly. The standard is the easy part. Judgement is the rest of this handbook.

This is summer alpine rock. No ice, no glacier, no winter kit. If a piece of gear only earns its place on a glacier or in a frozen gully, it's out of scope here and noted as such.

Read the leaflet. Every piece of safety gear ships with the manufacturer's instructions for use, the folded paper most people bin with the packaging. That document carries the specifics for your exact item: its rated use, its limits, its service life, how to inspect and retire it. This handbook teaches the principles that apply across all gear. The leaflet gives you the numbers and specifics for the thing in your hands.

PART 1 // THE PERSONAL SYSTEM

Four pieces are personal to you, and they go on before you ever touch the rock: harness, helmet, shoes, belay device. Get these right and the rest is detail.

HARNESS

What it does: distributes a fall's force across your hips and thighs and gives you rated, strong points to tie in and belay from.

What changes on alpine rock: you'll wear it for hours, over more clothing than in the gym, with gear hanging off it all day. So the things that don't matter indoors start to matter: enough gear loops (four is the standard), adjustable leg loops if you'll add or shed layers, and a build light enough that you stop noticing it.

The norm: **EN 12277 (UIAA 105)**. It defines four harness types, A to D, and the minimum strength of the tie-in points. Type C is the sit harness, and that's what you want for alpine rock.

How it fails: harnesses rarely break, they wear out and get retired. The belay loop and tie-in points are the high-wear zones. The other failure is human: tying in or belaying through the wrong loop. We will cover the check that catches that in future chapters, or in one of my Reels.

HELMET

What it does: two separate jobs. It protects against rockfall from above, and against hitting your head on the wall in a fall or a swing. They are not the same impact, and not every helmet is equally good at both.

Two constructions: hardshell, a hard plastic outer over a suspension cradle. Tough, takes repeated small rockfall and abuse, heavier. Second is in-mould, a foam core with a thin bonded shell; light, very good at absorbing a single impact, less durable. Neither is "better". Pick for how you'll use it.

The norm: **EN 12492 (UIAA 106)**. Every certified mountaineering helmet has to protect against both rockfall and impact, so the norm covers both jobs. It's the construction that shifts the balance: hardshell is stronger on rockfall and more limited in absorbing a side impact, in-mould is the reverse.

One hard line: a bike helmet is not a climbing helmet. It's built for one type of impact and isn't rated for rockfall. No substitutes here!

How it fails: foam compresses once. A helmet that's taken a real rock or hard knock has done its job and is finished, even if it looks fine. Retire it.

BELAY DEVICE

What it does: lets one person hold another's fall by adding friction to the rope.

Two families: manual or tube devices, where the rope runs through a slot. Simple, light, work with one or two ropes, handle a large range of diameters, and double for rappelling. Assisted-braking devices add a mechanism that helps clamp the rope under load: more security if used correctly, but fussier about diameter, technique, and situation.

The norm: **EN 15151** splits the two families. Part 2 covers manual braking devices, which is your tube. Part 1 covers braking devices with manually assisted locking, which is the assisted-braking group.

For alpine rock you'll most often want a device that handles two ropes and can rappel, which generally points toward a tube-style device, but the choice is genuinely use-case dependent.

The credibility line: would I put a beginner on an assisted-braking device for their first outdoor lead belays? For single-pitch sport climbing, absolutely. The extra security when attention slips is exactly what a new belayer benefits from, and it's what I put course participants on. But it doesn't replace learning the braking-hand principle, and it doesn't come along on alpine routes, where I want a device that takes two ropes and makes rappels straightforward. Most climbers end up owning both kinds of devices and that's perfectly fine.

How it fails: every belay-device failure I've seen is a use failure, not a hardware one. Wrong diameter, hand off the brake, device loaded wrong. The device is only as good as the technique. That's why belaying gets its own treatment in future content.

CLIMBING SHOES

What they do: the one piece here that isn't safety gear. They put rubber where you need friction.

The norm: there isn't one. Shoes aren't personal protective equipment, so nothing on the box is a tested minimum. Every claim about them is a manufacturer's claim.

What changes on alpine rock: comfort beats performance. The aggressive, painful down-turned shoe that helps on a steep gym problem is the wrong tool for a long, moderate alpine route where you're on your feet for hours. A flatter, stiffer, all-day shoe you can keep on between pitches is worth more than a number on the box. This is not the place to size for pain.

How it fails: rubber delaminates at the toe and edges round off with use. Both are resoleable. Good shoes are worth resoling rather than binning.

HONOURABLE MENTION FOR PARTNERS OF DIFFERENT WEIGHTS

If one of you is much heavier than the other, a normal belay has a problem: when the heavier climber falls, the lighter belayer gets yanked off the ground and into the wall, and the climber falls further as a result. The DAV's guidance is that once the difference passes roughly 10 to 15 kg, you should do something about it.

The cleanest answer is a friction add-on clipped to the first bolt. Edelrid's Ohm is the original, an "assisted-braking resistor" that adds friction to the rope only when a fall loads it, so the lighter belayer can actually hold the heavier climber. The newer Ohmega (2025) does the same job with a cam and a short Dyneema sling, and adds three selectable braking levels plus a built-in pulley that makes clipping and feeding far smoother. The Ohmega easily fits an alpine multi-pitch scenario as well, as it helps reduce forces acting on the entire system.

Four things to be precise about, because this gets misunderstood:

Neither is a belay device. They don't catch a fall on their own. They sit on the first bolt and work alongside whatever belay device you already use.

Direction matters. The Ohm is intended for a heavier leader and lighter belayer. The wrong way round just makes the catch harsh. That said, the Ohmega can also be used by a lighter leader, with its own benefits. Be sure to read the manual and the manufacturer's instructional materials for more information about it.

Sport routes, single rope. Designed for bolted sport climbing on a single rope, not trad gear or half ropes. But the Ohmega also for bolted multi-pitch routes.

There is no norm for these yet. Brake assistants are new enough that no EN standard covers them as a product group. Everything else on your harness has a tested floor. This doesn't.

Would I put a student on one? For a mixed-weight pair learning to lead-belay outdoors, this is one of the highest-value pieces of gear there is. Buying new today, I'd get the Ohmega. The smoother feeding and selectable braking levels make it noticeably easier to live with. A second-hand Ohm does the core job just as well.

There are other manufacturers producing devices that mitigate weight difference between climber and belayer, but I don't have enough personal experience with any of them, so I can't elaborate on those, but they function similarly to the Ohm.

PART 2 // THE ROPE QUESTION

The single most confusing purchase for a beginner. Here's the whole decision in one page.

The norm: EN 892 (UIAA 101) covers dynamic ropes. The type is stamped on the rope end: (1) for single, ($\frac{1}{2}$) for half, (∞) for twin. Learn to read that marking before you borrow anyone's rope.

Dynamic ropes, the stretchy ones that catch falls, come in three types.

Single: one rope, clipped on its own. Roughly 8.7–11 mm. Where it fits: sport, single-pitch, straight multi-pitch. Your default first rope.

Half: two ropes, to alternate pieces. Roughly 7.8–9 mm. Where it fits: wandering alpine routes, reduces drag, full-length rappels.

Twin: two ropes, always clipped together. Roughly 6.9–8 mm. Where it fits: specialist, not a beginner's first rope.

What you actually need first: a single rope. Simplest system to learn on, covers everything from the sport crag to straightforward multi-pitch. Move to a half-rope system when your routes start wandering and need full-length rappels; not a day-one decision.

Length: 70 m is where I point most people for a first rope. It covers the longer pitches and lower-offs at modern sport crags, and when the ends wear you can trim them and still have a usable rope. 60 m is fine if your local routes are shorter. Either way: always check the topo before you trust the rope to reach.

Don't confuse dynamic with static. Static (low-stretch) ropes have their own norm, EN 1891 (UIAA 107), with two types, A and B, in diameters from 8.5 to 16 mm. They're for fixed lines, hauling, and rope-access work. They are not for leading or belaying a climber. They don't stretch, so they don't absorb a fall. If a rope doesn't say it's a dynamic climbing rope to EN 892, it doesn't belong in your lead belay.

How it fails: ropes are tough in a straight pull and vulnerable in very specific ways: rockfall, a sharp edge under load, and chemical contamination (battery acid is the classic, and you can't always see it). Inspect hard and retire if in doubt. Track its age and its big falls.

PART 3 // THE RACK, INTRODUCED

This is a tour, not a manual. Placing this gear comes in future content. Right now you just need the names and what each thing is for, so you are familiar with the terminology.

Carabiners. The links that connect everything, covered by **EN 12275 (UIAA 121)**. Lockers (screw or self-locking) for anything that shouldn't come unclipped: belaying, rappelling, the anchor. Snapgates for quickdraws and racking, and, in combination with lockers, for building anchors. Two details. A carabiner is far weaker with its gate open than shut. The norm floor for gate-open strength is 7 kN, but the DAV teaching is that it should be at least 8, and that carabiners rated at only 7 aren't worth recommending. That gap is the ground rule from page one in one number: the norm is a floor, not a grade. And wiregate snapgates resist the gate flicking open on impact, because the lighter gate has less inertia, but they have their own slight drawbacks.

Quickdraws vs alpine draws. Quickdraws are two carabiners on a short stiff dogbone; quick to clip, great on straight sport routes. Alpine draws are two carabiners on a long sling that extends. They let the rope run straight on wandering routes, which reduces rope drag. On alpine rock you'll lean on these.

Slings and cord. Sewn loops used to extend, equalise, and build. Slings and quickdraws fall under **EN 566 (UIAA 104)**, which sets a minimum breaking strength of 22 kN. Nylon: stretchier, forgiving, holds a knot well. Dyneema or HMPE: far thinner and lighter for the same strength, but slick, and knots in it can slip, so it's bought sewn, not tied. This trips up more beginners than any other soft-goods question.

Accessory cord is covered by **EN 564 (UIAA 102)**, in diameters from 4 to 8 mm. Anything thinner than 4 mm isn't covered by the norm at all and isn't load-bearing gear. Cord with a kevlar or HMPE core and a nylon sheath is the go-to material for threading gear when building alpine anchors, as taught by the DAV. Note that knots cut cord strength substantially, which is why the anchor chapter cares which knot you use.

Protection. Passive (nuts or stoppers, hexes, and many more), a shaped piece of metal slotted into a constriction, no moving parts, covered by **EN 12270 (UIAA 124)**. Active (cams), spring-loaded lobes that expand inside a crack when under load, covered by **EN 12276 (UIAA 125)**.

A note on the strength numbers. Don't be alarmed that a nut's rated strength looks low next to a cam's. The norm asks only 2 kN of a nut and 5 kN of a cam, and every piece is stamped with the figure it actually reached. The number certifies the metal. The placement holds you.

PART 4 // OWN IT, BORROW IT, OR IGNORE IT

The honest version of a gear list. Not everything belongs in your pack, and not everything belongs on your credit card just yet.

Own it now: personal, fit-dependent, used every time. Harness, helmet, shoes, belay device, locking carabiners, chalk bag.

Borrow / share at first: expensive, not needed day one. The rope and the rack (draws, nuts, cams). Climb on shared gear, learn what you like, then buy once you know your preferences.

Ignore for now: solves problems you don't have yet. Full trad rack, half-rope systems, a second belay device, anything "alpine" that's really for ice or glacier.

Most people start outdoors with a more experienced partner who already owns the rope and rack. You'll buy better for having used a few options first. Buying ahead of your skill is how gear closets fill with things that never get used.

PART 5 // A STARTER KIT, BY BUDGET

Three honest tiers. The point isn't "buy the expensive one", it's to show what you gain and give up at each level, so you spend where it counts.

TIER 1 // The honest minimum. Buy the personal system, borrow the rest. Harness, helmet, shoes, belay device of preference, 2 locking carabiners, chalk bag. Rope and rack borrowed. Gets you climbing outdoors with a partner. Most people should start exactly here.

TIER 2 // Self-sufficient pair. Climb without borrowing. Everything in Tier 1, plus one single rope, a set of quickdraws and a few alpine draws, a basic set of nuts, a handful of slings and lockers. The real jump in cost and independence.

TIER 3 // Building toward alpine. Add only as routes demand it. Add cams, more protection, and, when routes start wandering and needing long rappels, a half-rope system. Don't buy gear in this tier until your climbing is asking for it.

PART 6 // HOW LONG GEAR LASTS

Gear doesn't last forever, and "it still looks fine" is not how you decide. Two clocks run on every piece: age and use. Whichever runs out first is the one that counts.

The leaflet has the real number. Manufacturers are required to state a service life, and that figure (not this document!) is the authority for your specific item. After the stated life, the maker's guarantee lapses; anything rented or used commercially must follow it; private use is your judgement call. What follows are the principles to judge with. These are the rules we teach and follow in our courses at the DAV.

Soft goods: rope, harness, slings, dogbones

Textiles age even unused in a cupboard, and faster in use. A useful way to think about a rope's life, by how often it's climbed on:

- Never used (correctly stored only): up to about 10 years.
- Once or twice a year: up to about 7 years.
- About once a month: up to about 5 years.
- Several times a month: up to about 3 years.
- Roughly weekly: up to about 1 year.
- Almost daily: under a year.

So a maximum around 10 years from manufacture, dropping fast with frequent use. The same two-clock logic applies to harness and slings: heavy use retires them earlier than the date alone. Passing the recommended life doesn't guarantee failure, but stretch and handling degrade with age and falls, and dirt is an underrated killer. Sand and grit grind the fibres from the inside like paste in a gearbox.

Hardware: carabiners, nuts, cams

Metal has no fixed expiry date. You retire it on condition, not calendar: cracks, deep wear grooves, sharp worn edges, corrosion, a gate or cam that no longer springs back cleanly. Inspected and undamaged, good hardware lasts many years. (Even on a mixed device like the Ohm, the metal part outlasts the textile sling, which is replaced on the textile clock above.)

Retire it now, regardless of age

Some things end a piece's life immediately, however new.

- A rope with a damaged sheath, a core visible through the sheath, or an end gone flat from repeated falls.
- A helmet that's taken a real rockfall or hard impact. The foam crushes only once.

- Any textile cut, badly frayed, heat-glazed, or exposed to chemicals.
- Any hardware cracked, badly corroded, or no longer working as designed.
- Anything that took a severe fall beyond normal use, or whose history you don't know. *Unknown history is its own reason to retire.*

When in doubt, retire it. Gear is cheaper than the alternative.

BEFORE EVERY CLIMB: THE GEAR CHECK

Owning the right gear is half of it. The other half is catching the day it's not right. A short, every-time look:

Harness: tie-in points and belay loop not fuzzed, faded, or worn. Buckles doubled back if needed.

Helmet: no cracks, cradle snug, foam intact. Retire if it's taken a real hit.

Rope: run it through your hands, feel for flat spots, core through the sheath, stiff or glazed sections. Know its age and its falls.

Belay device and lockers: right device for your rope diameter, lockers actually lock.

Rack: nothing cracked, bent, or seized; slings not faded or frayed; cam lobes spring back cleanly.

This isn't paranoia. It's the thirty seconds that catches the one thing that matters.

WHERE THIS GOES NEXT

You now know what each piece of gear does, what to buy and what to borrow, and how each one fails. That's the foundation. But gear is inert. A rope catches nothing without the knots that connect you to it; protection holds nothing without an anchor built correctly. That's the rest of the handbook.

This is the first chapter. The full handbook is the English-language entry point to how alpine rock is taught in the Alps, built from a field-tested course, not invented for the internet. The subsequent chapters will follow in the form of an email newsletter, in parallel to regular content on my Instagram profile. One section at a time, so be sure to join the list to not miss anything.

Here are some topics we will cover to begin with:

Knots and rope work. Tying in, the working knots, managing the rope.

Building anchors and abseiling. Anchors and getting back down.

Mobile protection. Placing the nuts and cams you just met.

Tour planning and communication. The judgement that ties it all together.

THAT'S CHAPTER ONE.

→ Follow [@domtheclimber](#) on Instagram

→ Join the [mailing list](#) to not miss future content