

Climbing / Rappelling Glossary

Abrasion - The wear and damage that occurs on rope and hardware caused by their rubbing against the rock or other hard / rough surface.

Active Protection - An artificial anchoring device that has moving parts. Usually a Cam or SLCD.

American Triangle - A triangle of nylon webbing formed by threading the webbing through two or more anchors and tying the ends together. The vectors formed by the triangle multiply the force on the anchors. This situation is commonly found on fixed anchors someone has rappelled from.

Anchor - The temporary means of attaching the rope and persons to something secure. This can come in the form of trees, boulders, chocks, cams and bolts to name a few. The anchor must be capable of withstanding the force of several thousand pounds.

Anchor Point - The single secure point for an anchor. This point could be a tree, boulder, chock, cam or bolt.

Anchor System - This describes multiple anchor points tied together in a manner that all the anchor points work as *one* "bombproof" anchor.

Artificial Anchor - This is a specially designed piece of hardware used to anchor with when no natural anchors are available to use. (i.e., chock, cam & bolt)

Ascender - A specially designed mechanical device or friction knot that is used to climb up a fixed rope. When in use, the ascender is secured onto the rope, then attached by carabiners and sling to the person using them.

Ascending - The act of climbing a fixed rope using ascenders.

Belay - The securing of a person with a rope in order to keep them from falling a distance that would cause considerable injury.

Belay Anchor - This is an anchor that is used to belay from. It must be "bombproof."

Belayer - This is the person who performs the belay by "holding the rope" for the climber.

Belay Escape - The method that allows the belayer to tie off a fallen, stuck or injured climber and to be able to free himself from the belay / climbing system.

Belay / Rappel Device - A specially designed piece of hardware that when attached to the rope, creates enough friction to stop a falling climber (belay) or to allow a person slide down a fixed rope safely (rappel).

Bight - This is a bend in the rope that is used to form several knots and also to thread belay / rappel device.

Bolt - A permanent anchor that consists of a metal shaft that is inserted into a drilled hole in the rock. A bolt "hanger" is used to enable a carabiner to be clipped to the bolt.

Bombproof - This term is to describe an anchor that is unquestionably solid. This anchor will not fail.

Brake Hand - This is the hand that holds the rope on the side of the belay device opposite the climber and that will activate the brake, locking the device to stop a falling climber. *The brake hand never leaves the rope.*

Cam - This is a generic term for a SLCD. This term also describes how certain protection turns or "cams" to hold in a crack.

Carabiner - This is a chain like metal link with a spring loaded gate to allow the rope to be inserted. This item is an essential part of connecting together an anchor system.

Chest Harness - A harness worn specifically to keep a person's torso upright. *This must be worn with a seat harness.*

Chock - This is a generic term used to describe "passive protection," a non mechanical anchoring device that has no moving parts. This device depends on wedging in converging parts of a crack. Man-made versions are also known as an "artificial chockstones" and "nuts."

Chockstone - A stone that is wedged in a crack.

Cordelette - 5.5 to 8 mm climbing cord cut at a length of 18 to 21 feet and tied into a continuous loop with a double or triple fisherman's knot. This is can be a convenient and efficient tool for anchoring and self rescue.

Descender - A rappel device.

Direct aid - A technique used in climbing where the climber uses direct support of the protection to advance up a climb. Normally employed when free climbing is not an option. Even a free climb would not be considered to be "free" if one was to use even the slightest support from any gear. It would be "aid." Try again...

Directional - Any alternative anchor point that is used to reposition the rope in the most favorable position.

Double pass Buckle - Most standard climbing harnesses that have a buckle closure that requires the user to thread the webbing through twice. The second pass goes back out to your starting point. *If you own your own harness read the directions and become familiar with it!*

Dynamic Rope - This rope is designed to stretch, absorbing the force of a falling climber. This reduces the shock on the climber, belayer and the anchor.

Equalized - When all of the anchor points of an anchor system are rigged so they all share the load equally.

Extension - When any part of an anchor system fails there is the potential for slippage to compensate for the failure. The shock load on the remaining anchor when the slippage stops is undesirable.

Fall Factor - The severity of a fall is derived by dividing the length of the fall by the length of the rope catching the fall. The maximum fall factor is two.

Figure 8 Descender - A metal rappel device shaped like an "8." The large ring on one end is for the rope to pass through, creating friction and the small ring is for attaching to seat harness with a locking carabiner.

Fireman's Belay - The belay of a rappeller by having a person tend the bottom end of the rappel rope and having them pull it tight to stop the person on rappel in an emergency. It's like having an extra brake hand.

Fixed Anchor - A permanent anchor point, usually man-made like a bolt.

Free Climbing - This is when the climber uses his hands and feet to make progress and the equipment employed is only there for safety in the case of a fall. Not to be confused with "free soloing."

Free Soloing - This is free climbing without the safety net of having any rope or anchors to catch the climber if they should fall. The consequences of a fall are clear.

Friction Knot - Any one of several knots / hitches that when applied to the rope will tighten and hold a load. (i.e., Prusik, Autoblock, Bachman and Kliemheist)

Gemini Cord - A 5.5mm cord made from kevlar and spectra fibers with a nylon sheath from Black Diamond Ltd. See: High Tech Cords.

Guide Hand - The opposite hand of the brake hand. In belaying it helps manage and position the rope. In rappelling it helps the rappeller keep their balance.

Hardware - Any of the gear used in climbing and rappelling other than ropes and webbing.

Helmet - A specifically designed hard hat for climbing. *Helmets made for other activities should be used only for those other activities.* Climbing helmets were designed to withstand far different forces than for example, a bike or skate helmet.

Helmet Zone - The area that helmets must be worn by everyone whether they are climbing / rappelling or not. The group leader should determine these boundaries.

Hex - A six sided chock with various sizes of fit for placing in cracks. The chock cams when loaded increasing its holding power.

High Tech Cords - These are 5.5mm cords that are extremely strong for their size (>4000lbs.). There are several different types, each with their advantages and slight disadvantages. Gemini Cord, Titan Cord and Vectran™ are just a few. Most have high tensile strength and very low stretch. This is common cordelette material and cord used for chocks.

HMS Carabiner - The halbmastwurf sicherung, or half clove hitch belay carabiner is the only carabiner to be used with a munter hitch. It is a large pear shaped locking carabiner with a large radius on the side near the gate opening.

Impact Force - This is the force that still remains in the climbing system when the climber finally stops. The maximum impact force created in a severe fall (factor of 2) is about 2,680 lbs. or 12kN. Forces below this figure are what the human body can withstand without major injury to the spine and internal organs.

Kernmantle Rope - A rope designed with a distinctive core (kern) and mantle (sheath). The core supports most of the load and the sheath protects the core from damage as well as supporting some of the load. All modern climbing and rappelling ropes are made using this construction.

Kevlar™ - A Dupont product from Aramid-type fibers that sometimes is used in high tech cords. This material has a tendency of losing considerable strength after repeated flexing by abrading itself. See: High Tech Cords.

kN - A kilo newton is a unit of force used to describe the energy generated in a fall and the breaking strengths of all climbing / rappelling hardware. 1kN = 225lbs.

Laid Rope - A rope designed with twisted and exposed strands. The strands are made into bundles and the bundles are twisted around each other. Are you familiar with “trucker’s rope?”

Lap Coil - A rope coil that is created as if one was laying the rope back and forth across their lap. If the loop size is short enough, and one starts from the middle of the rope, one can tie it off to carry like a backpack. The advantage of lap coiling is minimizing the twists that occur in the rope, thus it is less likely to get snarled or tangled when deploying it for use.

Lead Climbing - Starting from the ground up, the “leader” climbs towing a rope from which he is being belayed on from below. The leader places protection and clips the rope to it as he moves up. Should the leader fall, he will be caught by the belayer and his last protection. The leader will anchor when done and belay the second up the climb on top rope.

Locking Carabiner - A carabiner that has a locking mechanism that keeps the gate from accidentally opening. The locking mechanisms available are screw-gates and various versions of auto-locks.

Locking Off - To tie off a belay / rappel device in order for the belayer or rappeller to get their hands free. This is a segment of the belay escape and self rescue.

Lowering - This is the method of descent when the belayer can let the climber down using the belay device. This is the most common method of descent for top rope climbing.

Magic X - The method of creating a self equalizing master point with a sling from two anchor points. A half twist in one strand of the sling creates a closed loop that the master point carabiners cannot come off the loop or anchor if one of the anchor points fail.

Master Point - The main attachment point of an anchor system for ropes and belays.

Mountaineer Coil - A shoulder coil for the rope.

Multi-directional - This is the term for an anchor that may be loaded in any direction.

Multi pitch - A climb that is more than one rope length.

Munter Hitch - This is the name of a extremely useful belay / rappel hitch that slips around a carabiner and creates friction as it runs on itself.

Non Locking Carabiner - A carabiner with no locking mechanism to secure the gate shut.

Nylon 6 - A type of nylon used in rope manufacture. Its European trade name is “Perlon.”

Nylon 6,6 - A Dupont and Monsanto product used in climbing / rappelling rope manufacture. This has a slightly higher melting point and breaking strength than Nylon 6.

Passive Protection - This term describes a non mechanical anchoring device, natural or artificial. This includes, chocks, trees and rock outcroppings.

Pitch - This is a section of a climb determined by the length of the rope or the most effective place to belay. On a lead climb, a pitch may be 50 meters. All top rope climbs, short or long in length, are one pitch.

Protection - A single anchor point in which the lead climber places and clips his rope into while moving between belay anchor locations.

Prusik - See Friction Knots.

Prusik Loop - A continuous tied loop of small diameter cord, usually about 6mm, used to tie various friction knots / hitches.

Pulley - A specifically designed device to reduce friction at the turn-around point of a rope. The main use for this item is for hauling a load or stranded climber.

Rappel - The method of descending a fixed rope using a rappel device to add friction to control the descent. See: Belay / Rappel Device.

Rappel Rings / Links - A permanent set of rings or links at a fixed anchor left there to facilitate rappelling and / or lowering. These are usually not durable enough for top roping through.

Redundant - A secure anchor must be constructed so it has more than one anchor point, sling, carabiner. If one part fails, there will always be an extra part to keep the whole anchor system from failing.

Reversed and Opposed - The manner in which one sets up double carabiners when security is mandatory. The gate openings of the carabiners are oriented in reverse of each other, then on opposite sides of each other.

Running End - This is the end of the rope that the climber is tied to. Also known as the "live end."

Self Equalizing - This is an anchor system of two or more anchor points that continues to distribute an equal load on all of the anchor points even during a change in direction of the master point. This is achieved by using the magic x and must be done only with bombproof anchor points.

Self Rescue - The method of getting out of "the woods" by using only the climbing tools at hand at the time.

SLCD - A Spring Loaded Camming Device is the term given for various designs of active protection to create anchor points in a crack. "Cams" are the single most important climbing invention since nylon rope was introduced because of their ease of placement due to their continuous size range per unit.

Sling - This term describes a section of webbing tied or sewn into a continuous loop. These are often used in the anchor system.

Solid - An anchor that is unquestionably secure.

Spectra™ - An Allied Signal Corporation's high tech cord fiber that is used in Titan and Gemini Cord. Though, not heat resistant, it does not lose significant strength after repeated flexing.

Standing End - This is the opposite end of the rope from the end that the climber is tied to. See: Running End.

Static Rope - This type of rope is designed to have very low stretch. These are best for rappelling and ascending for durability and when only the force of body weight will be exerted on the rope.

Timely - Making good use of your time by surveying the climbing / rappelling site, choosing the most simple, but bombproof set-up for an anchor system while using a minimal amount of gear.

Titan Cord - The Blue Water Company's version of 5.5mm high tech cord. See: High Tech Cord and Spectra™.

Top Rope - The climbing activity where the climber is belayed from a rope from above. When the rope is threaded through the master point on the anchor above and both ends of the rope are available at the base of the climb this is called a "slingshot belay." This is the most common method used to top rope climb.

Tri-axial Loading - When a carabiner is stressed in three different directions and could cause the carabiner to fail.

Webbing - Nylon fiber woven into a flat strap and is used for slings. The most common used for anchors is tubular webbing.

Vectors - This term is normally used in describing the angles that are measured in degrees between the arms of anchor points in an anchor system from the master point. The force of the load on each arm of the anchor is multiplied as the angle increases. A general rule of thumb is to keep the vectors < 90 degrees when setting anchor systems.

Vectran™ - This is a high tech cord material spun by Celanese. Sterling Rope Company makes and distributes it as 5.5 mm cord. It has a melting point of 600 degrees Celsius and can be flexed repeatedly without abrading itself. See: High Tech Cord.