



EN

WORK SAFETY

2024

TECHNOLOGIES

EDLERID 

ROPES | TECHNOLOGY

BRAIDING CONSTRUCTIONS

In recent years, EDELRID has pioneered a range of innovative, braiding technologies that improve a rope's overall characteristics and lifespan. These new techniques also make our ropes safer to use.



SyncTec

In contrast to conventional kernmantle ropes, SyncTec technology ropes have a permanent, mechanical connection between core and sheath. During the braiding process, the core and sheath are braided together at constant intervals. Compared to chemical connections (e.g. using adhesives), which can break down over time, the SyncTec connection is permanently stable. Core and sheath form a unit, which leads to a better force distribution between the individual fibers. This makes SyncTec ropes particularly compact, dimensionally stable and pleasant to handle. In addition, the permanent connection of core and sheath prevents the sheath from slipping off the core in the event of damage to the sheath (e.g. due to a sharp edge), which is an additional safety feature. These properties make SyncTec ropes the first choice for demanding highaltitude and rescue operations, where an additional safety margin is desirable.



Cut Protect

The development of a new braiding process and the combination of high-strength aramid and polyamide fibers allow us to produce ropes with a high cut resistance. Since the current standards do not include a test procedure for assessing the cut resistance, EDELRID has developed an own test that makes it possible to quantify cut resistance in a reliable way.

CORDE | TECNOLOGIE



Thermo Shield

Thermo Shield è il trattamento standard cui vengono sottoposte tutte le corde per garantire l'ineguagliabile maneggevolezza delle corde EDELRID. Questo trattamento consiste in un processo termico attraverso il quale i fili che compongono l'anima e la calza della corda vengono armonizzati perfettamente fra loro. Grazie ad uno speciale trattamento termico, le fibre si allentano all'interno della corda e si dilatano. In questo modo vengono uniformate le caratteristiche di scorrimento all'interno della corda, che diventa così più maneggevole e compatta. È così possibile produrre corde che non si restringono né diventano rigide dopo poco tempo.



Tracer Thread Markings

In base al numero di fili di riconoscimento nella calza è possibile intuire rapidamente ed in maniera univoca il diametro delle corde statiche e dei cordini EDELRID.

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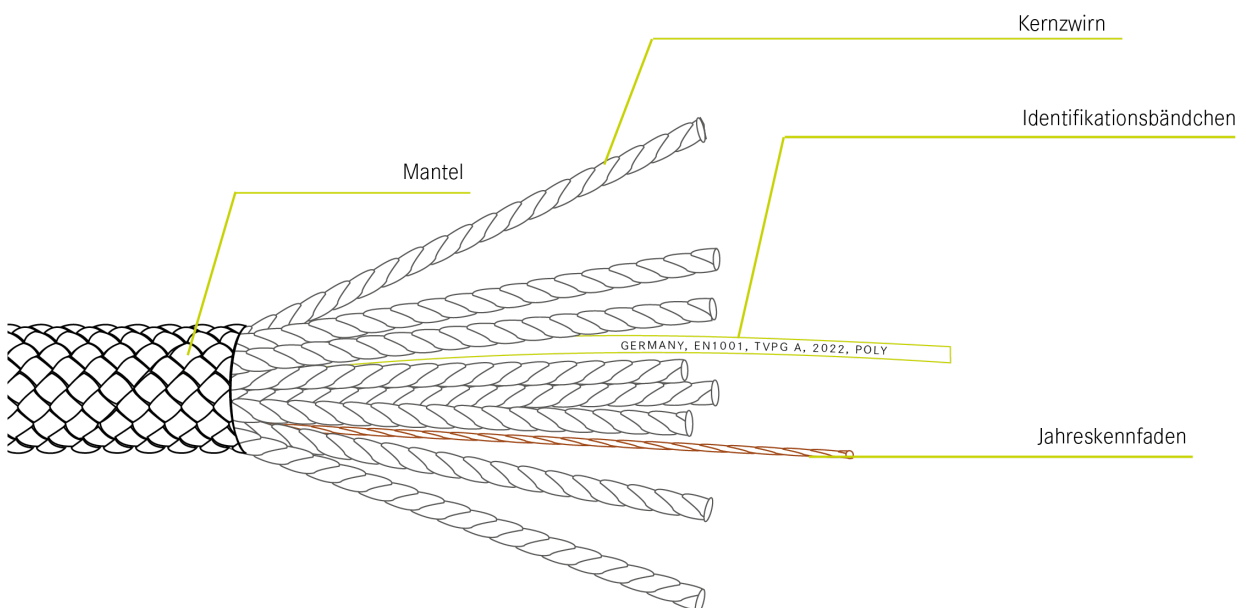
UNDERSTANDING YOUR ROPE

Identification tape

The identification tape is a thin strip of polypropylene. In accordance with the EN 1891 standard for static ropes, it has to display the following information: name of manufacturer, standard and rope type, year of manufacture and the type of material the static rope is made from.

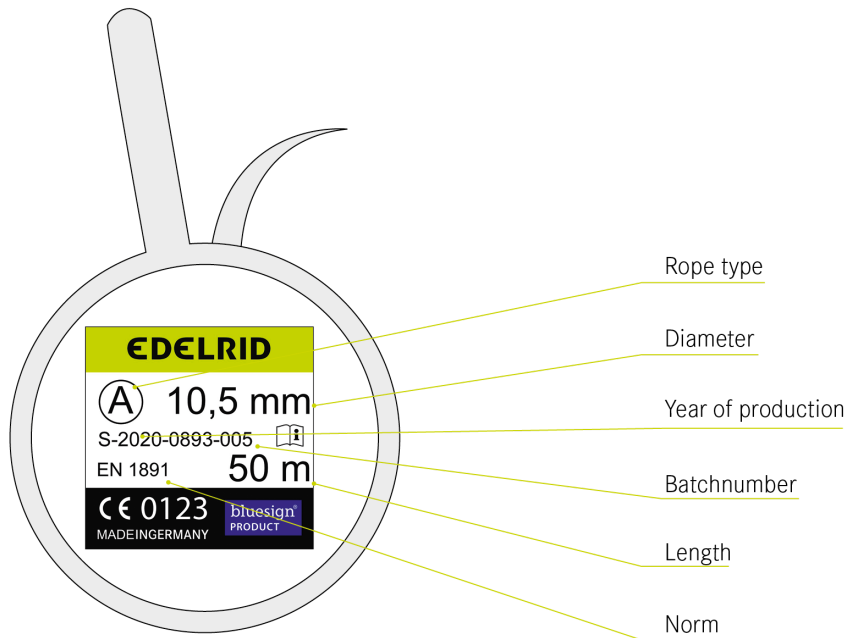
Color Code Threads

The year of manufacture tracer thread is made from polyamide, and is in a particular color. Its color shows the year the rope was manufactured, although the same set of colors is repeated every ten years. The year of manufacture tracer thread means that this information is permanently marked for the lifespan of the rope.



ROPES | TECHNOLOGY

ROPE END LABEL



Color Code Threads

Year	Color
2009	pink
2010	black
2011	brown
2012	red
2013	orange
2014	yellow
2015	green
2016	blue
2017	purple
2018	grey
2019	pink
2020	black
2021	brown
2022	red
2023	orange
2024	yellow



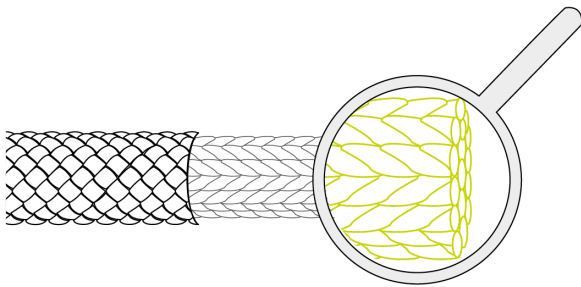
ROPES | TECHNOLOGY

CONSTRUCTION

The construction of the core and sheath in EDELRID ropes varies to fulfill different requirements. The secret lies in the perfect balance between the individual components.

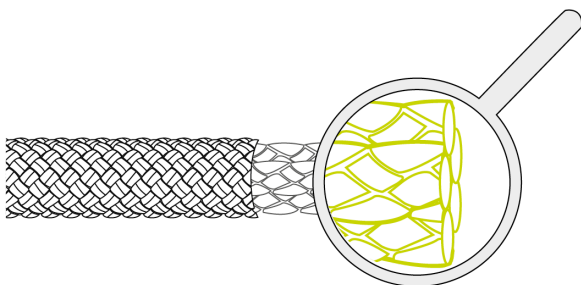
CORE (inner layer)

The core is the load-bearing part of the rope. It's made of very fine multifilaments that are made into core strands or core braids. We use two distinct multi-stage processes: twisting and braiding.



Twined

This is the standard method of core construction. Depending on the type of rope being produced, 3 basic yarns (possibly 5 or 6) are twisted to form a core yarn. In a static rope, the load-bearing core is constructed from 13–22 of these core yarns.



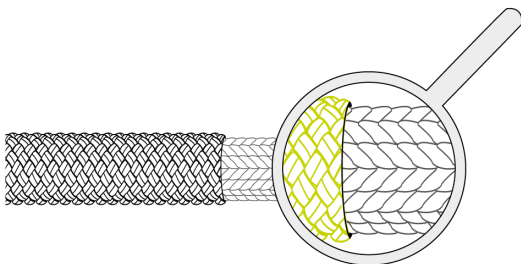
Braided

In this complex method, the raw material is braided to form 1, 2 or 3 layers depending on the type of rope being produced. This results in a particularly compact structure. Ropes with a braided core have better dimensional stability and higher edge stability than ropes with a twined core. They are also easier to splice and have higher breaking strength with sewn terminations.

ROPES | TECHNOLOGY

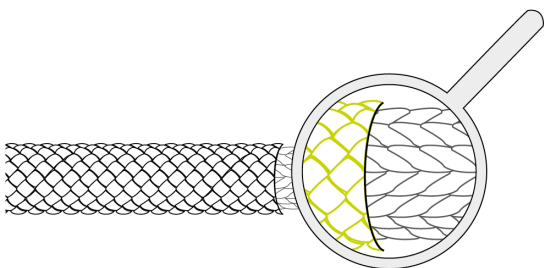
Sheath

The sheath protects the core from external influences, such as abrasion, UV radiation, etc. and prevents dirt from getting in. You can visually inspect a kernmantel rope by looking carefully at the sheath. If the sheath is damaged, and the inner core is visible then the rope should be retired. We use different types of sheath constructions depending on what a rope is to be used for.



Twined

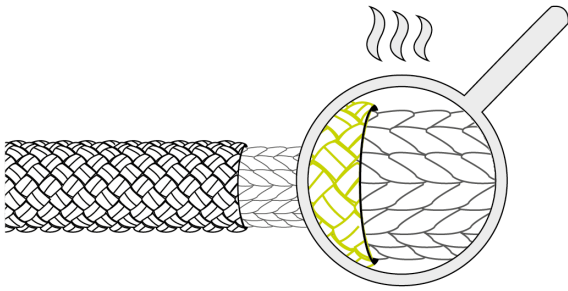
In the twining process, 2, 3, 4 or 5 single sheath yarns are twisted together at a specific tension and rotation speed. The twisting of the yarns increases the surface area of the mantle and thus improves abrasion resistance.



Multiple-wound

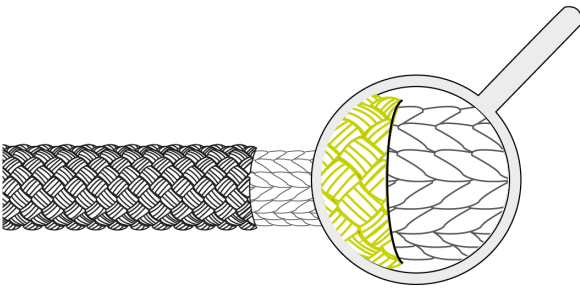
In this method, the yarns are wound onto the spools in parallel instead of being twined. This guarantees maximum utilisation of the fibres and ensures the highest possible breaking strength values. The one minor disadvantage of these ropes is that they are slightly less abrasion resistant than twined ropes.

ROPES | TECHNOLOGY



Twined and shrunk

In this method, the yarns are shrunk in an autoclave after twisting. This shrinking process ensures that the rope remains supple and easy to handle throughout its working life and does not reshrink, even after heavy use. The twined mantle construction also guarantees maximum abrasion resistance.



Parallel-wound twines (multiple-wound twines)

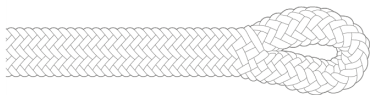
This method combines the advantages of the twined and the multiple-wound sheath constructions to produce the highest quality ropes on the market. The sheath yarns are first twisted, and then wound in parallel onto the spools. We use this complex construction exclusively for our topclass ropes which require highest breaking strength and maximum abrasion resistance in equal measure.

ROPES | TECHNOLOGY

TERMINATIONS

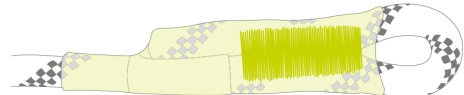
A rope is only as strong as its termination. Sewn terminations are far stronger than knotted rope ends. They are also significantly slimmer, which is a particular advantage when the ropes have to be threaded through small openings.

All terminations are computer-sewn at EDELRID and provided with a high-quality synthetic protective sleeve. In order to fulfill the diverse requirements for professional applications, EDELRID takes orders for ropes of any desired length with certified terminations (at one or both ends). The customer can choose between different types of terminations.



SPLY – compact splice with high safety reserve

The splice has a long tradition as a compact and clean rope termination. The patented SPLY is extremely compact as there is only a minimal increase in thickness in the splice eye. As such, this splice passes through the most common SRT and DRT devices, eliminating the arduous task of pulling the rope through. At the same time, the splice offers added safety as part of the core passes through the entire eye. The SPLY is handmade in Isny.



Sewn termination – the workhorse of our terminations

Our proven standard termination is always used when highest breaking strength are required. The rope end is reversed and sewn to create a termination eye. A transparent protective sleeve reliably protects the seam from damage. Thanks to the transparent protective sleeve, the seam can be visually inspected easily. The strength of the sewn termination depends on the construction and the rope diameter. You will find the relevant values with the individual rope data.

ROPES | TECHNOLOGY



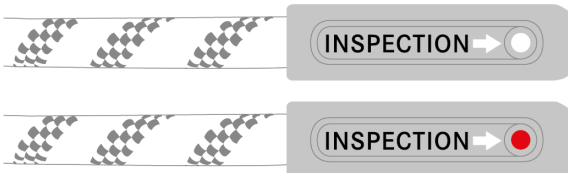
Weblink – the slimmest termination on the market

The Weblink is the slimmest termination on the market. An unbeatable advantage if the rope has to be threaded through small openings (e. g. the rings of a cambium saver). With the Weblink, narrow polyester or Dyneema® webbing is sewn to the end of the rope. The resulting termination is protected against wear by an abrasion protector. Depending on the area of application, EDELRID offers three different variants of these end connections. The Weblink termination has a strength of >15 kN.



Weblink

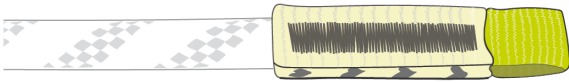
The Weblink is fitted with an abrasion protector with integrated inspection window for inspection during attachment. If the carabiner is correctly attached, the polyamide webbing can be seen in the inspection window (if the carabiner is not threaded through the webbing, the carabiner is visible). Additionally the abrasion protector holds the connecting element in place to prevent undesired cross loading. The abrasion protector can be completely removed for a full visual inspection.



Weblink Indicator – termination with a built-in fall indicator

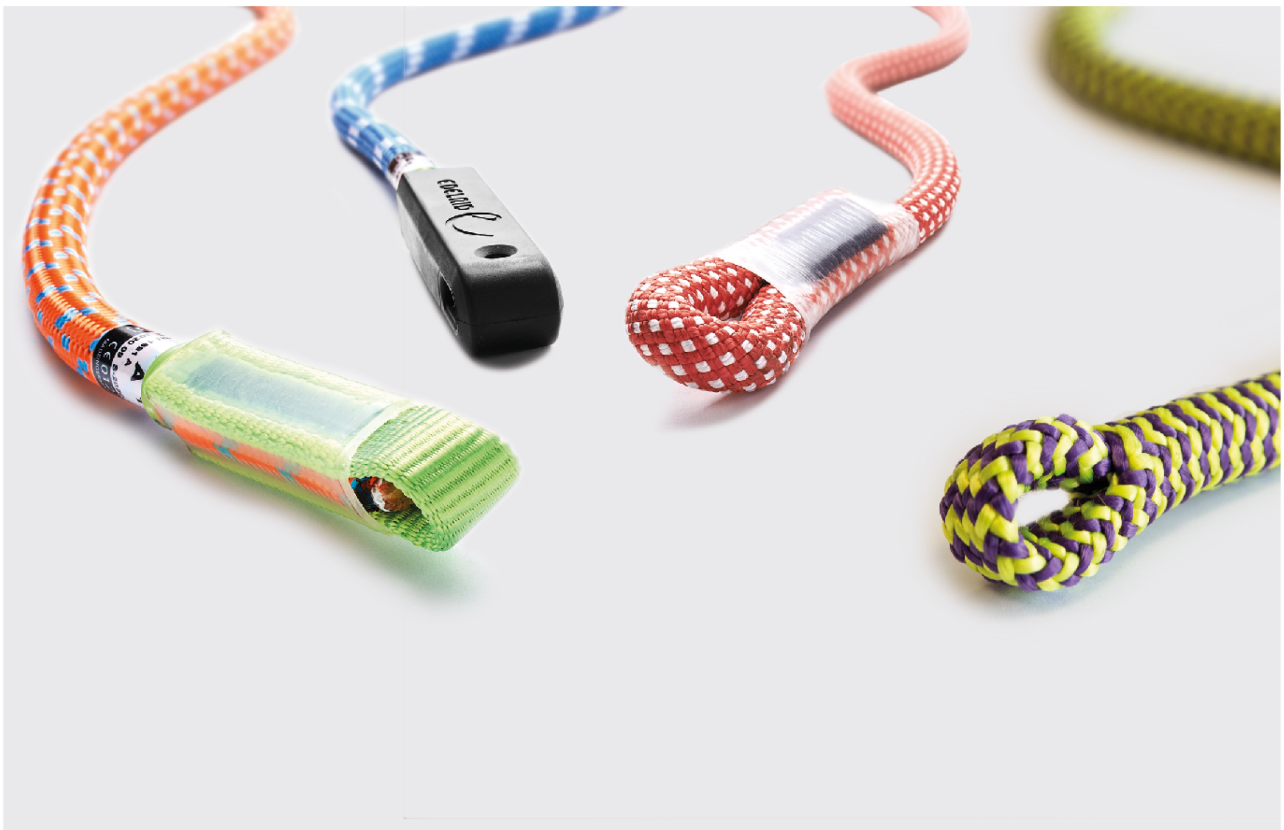
The Weblink Indicator has all the characteristics of the Weblink, but with the additional advantage of a built-in fall indicator. If the system is subjected to an impact force of 6 kN (fall factor of 1) a red indicator strip appears in the protective sleeve's inspection window. An unmistakable sign that the system has been subjected to too high a load and the rope must be replaced.

ROPES | TECHNOLOGY



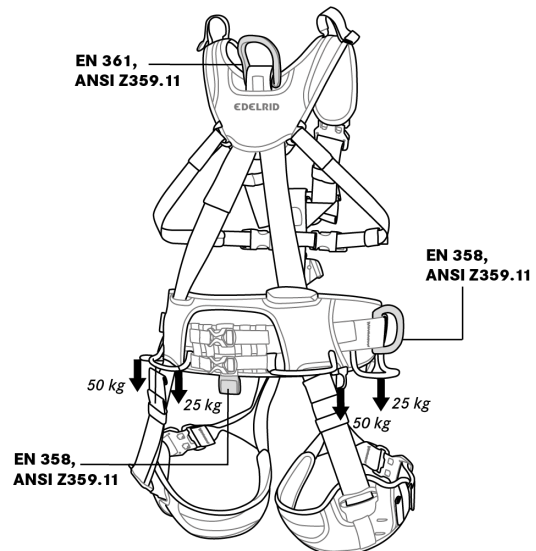
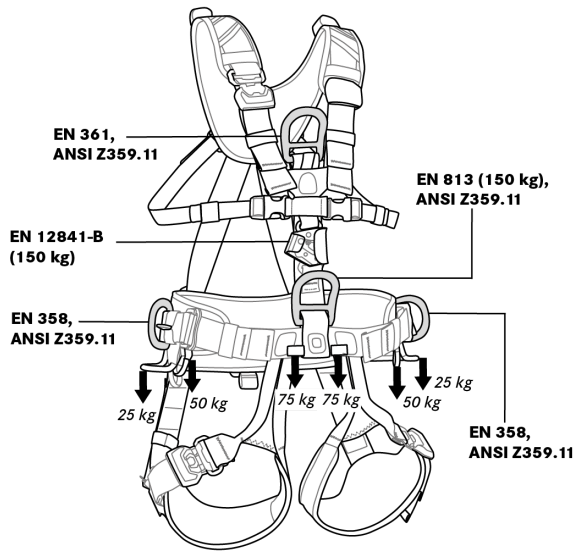
Weblink Arborist

Arborists particularly rate the narrow termination. Thanks to its small size, it is particularly easy to thread through small openings (e.g. the rings of a cambium saver). A transparent shrink hose protects the termination from premature wear and allows quick and easy inspection of the seam.

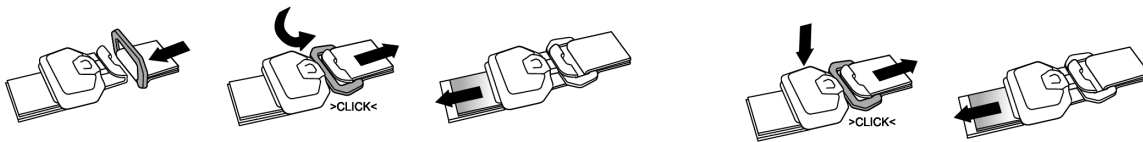


HARNESSES | TECHNOLOGY

CONSTRUCTIONS



BUCKLES



Triple Lock buckle

The Triple Lock buckle is the safest and most innovative buckle in the EDELRID range. We primarily use it for our top harnesses. Triple Lock buckles are particularly safe as three motions are required to open them. Furthermore, they cannot be opened when under load. Despite this high level of safety, Triple Lock buckles are still quick and easy to use. They can be fully opened, enable rapid length adjustment and, thanks to the large push buttons, can even be conveniently operated when wearing gloves. Triple Lock buckles are tested in accordance with ANSI criteria.

Double Lock buckle

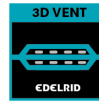
Visually, the Double Lock buckle is identical to the Triple Lock buckle. However, instead of three movements, only two are required to open and close the buckle. We use this buckle exclusively in the leg loops of our harnesses, where the focus is on quick and easy operation. Double Lock buckles can be fully opened, enable rapid length adjustment and, thanks to the large push buttons, can even be conveniently operated when wearing gloves.

HARNESSES | TECHNOLOGY



Indicator Webbing

All load-bearing straps of our harnesses are equipped with indicator webbing. In the event of excessive wear a red wear indicator warning thread becomes visible – alerting the user that the harness should be replaced.



3D-Vent technology

The 3D-Vent technology harnesses offer widespread load transmission, ergonomic fit and good breathability. Our 3D-Vent harnesses are among the most comfortable harnesses on the market. High-quality padding reinforced with homogeneous stitched webbing ensures even load transmission over all areas of the harness. The three-dimensional form of the leg loops are anatomically shaped to fit the human body. The robust three-layer foam padding retains its shape even when subjected to pressure. The perforations in the foam allow body heat and perspiration to escape.



RFID inside

Harnesses with integrated RFID transponders — for quick registration and effective management of PPE equipment. Using appropriate software it is possible to monitor application cycles and/or the PPE status of the product. This saves time and money while increasing safety.

HELMETS | TECHNOLOGY

CERTIFICATION

Whether working at height or in the industrial sector, a helmet is an essential part of any equipment. Certified to European and international standards, EDELRID helmets reliably protect the head against impact or falling objects.



Industrial safety helmets (EN 397)

Industrial safety helmets should protect the head of the wearer from falling objects. The standard defines the following mandatory requirements:

- If the helmet has vents, their total size must be at least 150 mm² and at most 450 mm²
- Vertical shock absorption
- Penetration resistance against pointed and sharp objects
- Flame resistance
- Chin strap fastening: the chin strap releases at 150 N as a minimum and at 250 N as a maximum

There are also some optional requirements, but these are not mandatory:

- Resistance at very low temperatures (-20 °C or -30 °C)
- Resistance at very high temperatures (+150 °C)
- Electrically insulated (1.2 mA)
- Resistance to molten metal splash
- Lateral deformation



Electrically insulated helmets (EN 50365)

Electrically insulated helmets are used to protect against electric shocks and to prevent dangerous flow through the body, e.g. when working on low voltage systems. The following requirements are mandated by the standard:

- All requirements as stipulated by EN 397
- Protection against AC voltage up to 1000 V or DC voltage up to 1500 V
- Isolating helmets must not contain conductive parts
- Vents (if provided) must not allow unintentional contact with live parts



Climbing and mountaineering helmets (EN 12492)

Climbing and mountaineering helmets are designed to protect the head of the wearer against dangers that can occur during mountaineering (falling rocks, impact after a fall). The following requirements are mandated by the standard:

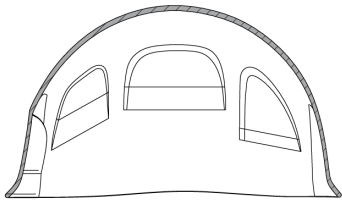
- The helmet must be ventilated. The size of the ventilation slots must be at least 40 mm²
- Vertical, frontal, lateral and dorsal shock absorption capacity
- Penetration resistance
- Chin strap fastening strength (chin strap releases at 500 N as a minimum)
- Chin strap fastening strength: chin strap may stretch a maximum of 25 mm
- Effectiveness of the chin strap: the helmet may not slide off the wearer's head (retention test)

HELMETS | TECHNOLOGY

	EN 397	EN 12492	ANSI Z89.1	EN 397	EN 12492	EN 397	EN 12492	ANSI Z89.1	EN 397	EN 50365	ANSI Z89.1	EN 397	EN 12492	EN 397	EN 397	ANSI Z89.1	EN 397	EN 397	ANSI Z89.1	ANSI Z89.1			
	Impact Protection			Penetration Protection			Chinstrap Strength			Electrical Protection		Ventilation		Molten Metal Protection		Flame Resistance		Lateral Deformation		Low Temperature		High Visibility	
Serius Height Work	✓		✓				✓	✓	✓	✓	✓			✓	✓	✓			✓	✓			
Ultralight Work Air	✓				✓							✓											
Zodiac		✓											✓										
Zodiac 3R		✓											✓										
Salathe		✓											✓										
Shield		✓											✓										

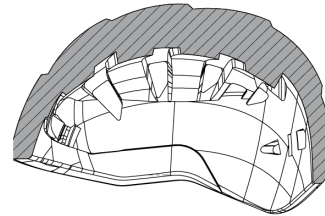
HELMETS | TECHNOLOGY

CONSTRUCTION



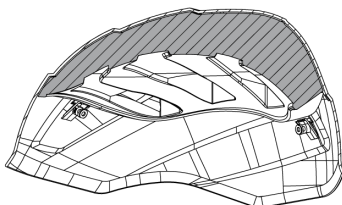
Hardshell Helmets

These helmets have an extremely robust and shockproof shell made of plastic, which extends over the entire outer helmet surface. Whereas in the past the shells were mainly made of fiberglass reinforced plastic, nowadays mixtures of polypropylene and acrylonitrile butadiene styrene (ABS) are generally used. An internal strap construction increases the cushioning properties and ensures that the helmet does not rest directly on the head. The elongation of the straps and the elastic deformation of the shell ensures any impact energy is absorbed. Thanks to its extremely solid construction and the largely antibacterial straps, which can be easily removed and cleaned, this helmet form is particularly suitable for commercial facilities such as climbing gyms and adventure parks.



Softshell Helmets

Helmets with in-mold technology have a thin outer shell made of polycarbonate, which is firmly connected to a shock-absorbing expanded polystyrene (EPS) core. The energy is absorbed by a deformation of the EPS core. The polycarbonate shell protects the EPS core from damage and distributes the resulting force over a larger area. Depending on the model, the outer shell may only partially cover areas of the head. In-mold or softshell helmets are particularly light, but also less robust than other helmet types. In-mold helmets can be damaged by careless stressing, for example, by accidentally sitting on them when they are stowed in the rucksack.



Hybrid Helmets

Hybrid helmets combine the advantages of both softshell and hardshell helmets. The outer shell is made of robust and impact-resistant ABS. Underneath the outer shell, an internal EPS (expanded Polystyrene) foam shell provides excellent shock absorption. Hybrid helmets are particularly robust all-rounders.

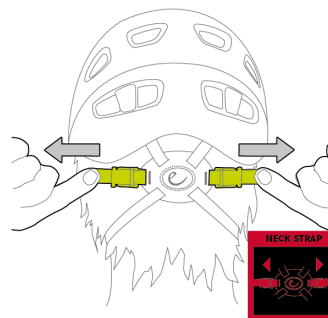
HELMETS | TECHNOLOGY

CLOSURE SYSTEMS



Wing Fit system

Innovative closure system with rear adjustment dial. The webbing cradle can be quickly adjusted to fit all head shapes by turning the dial. During transport the cradle tucks away into the helmet.



Head and neck strap

The head and neckstrap are fully adjustable via two clip buckles. Designed to provide a perfect fit, minimum pack size and excellent ventilation. The straps tuck away into the helmet during transport.

RFID | TECHNOLOGY

WHAT IS RFID?

RFID describes a technology for transmitter-receiver systems for automatic and contactless data transmission using electromagnetic waves. An RFID system consists of a transponder, which is located on or in the object and contains an identifying code (e.g. the serial number), and a scanner to read this code.

EDERID only uses transponders in the UHF frequency range. A particular advantage of UHF transponders is that they are activated by the scanner and do not require their own power source. When using UHF, inexpensive and individual transponders can be used. In addition, this technology is significantly less susceptible to faults in metallic

components. With passive transponders, products 2–6 meters away can be reached without negatively affecting the scanning speed.

In practical application, this means digital readability saves time and money, the lifespan of the PPE products is extended considerably due to the permanent product identification and the human error chain is significantly reduced.

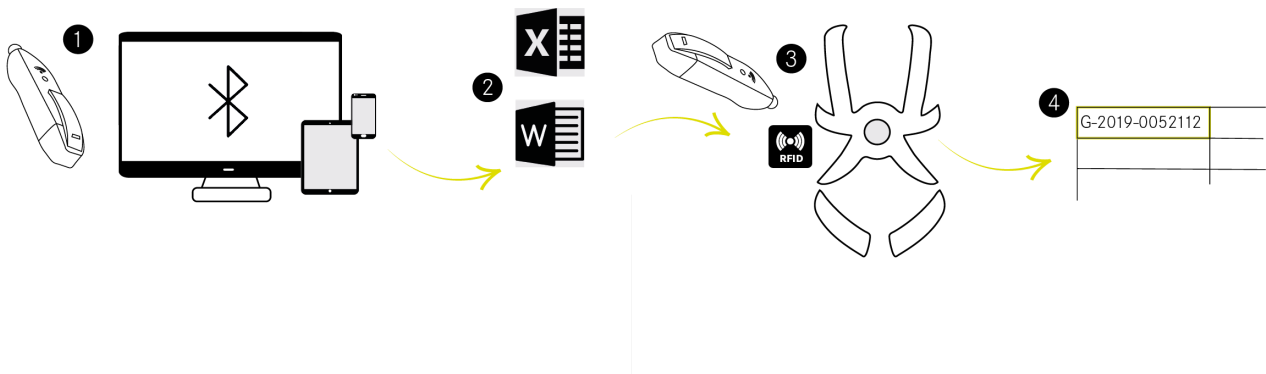
All advantages at a glance:

- **Saves time and money**
- **Reduces potential human error**
- **Increases product lifespan**

How does RFID work?

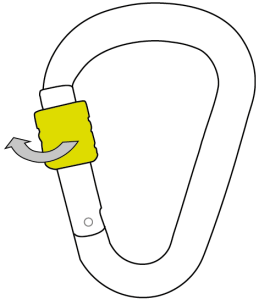
The RFID Reader can be used with any device that has a Bluetooth® interface and is software independent.

1. Pair the RFID READER with the device.
2. Open the PPE management software of your choice (i. e. Excel, etc.).
3. Select the field into which you want to scan the serial number.
4. Scan the RFID transponder in your PPE product and the serial number is automatically read.



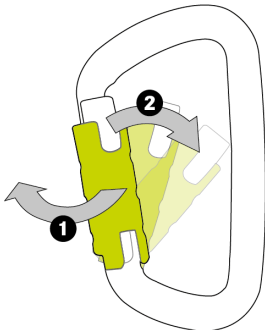
CARABINERS | TECHNOLOGY

LOCKING SYSTEMS



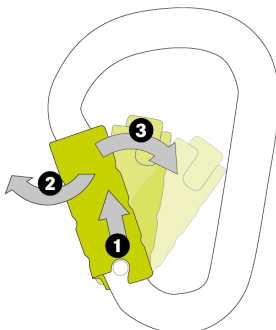
Screwgate

These classic carabiners cover a wide range of uses. The easy-grip threaded sleeve allows the gate to be closed quickly, intuitively and one-handed if required. Screwgates have a manual locking mechanism which must be actively closed to ensure full safety.



Twist Lock

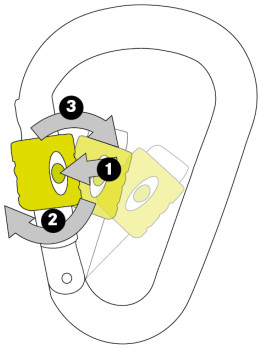
Twist Lock carabiners have a twisting sleeve. You have to open them by turning the sleeve approximately 90° before you can open the gate. Twist Lock carabiners are auto-locking carabiners. They are self closing, shut automatically as soon as you release the gate and can still be operated with one hand. They are ideal for situations where both safety and speed are paramount.



Triple Lock

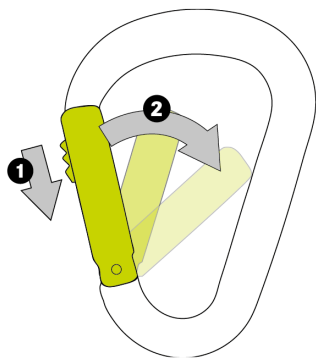
Triple Lock carabiners require three separate actions to open the carabiner. This offers extra safety compared to screwgate and Twist Lock carabiners. However, one-handed operation is pretty difficult and takes practice. They are ideal for situations where maximum safety is called for.

CARABINERS | TECHNOLOGY



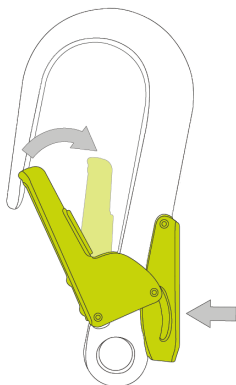
Permalock

Innovative screw gate carabiner with an additional locking mechanism on the locking sleeve. This is made possible by the smart Permalock locking mechanism. Due to the integrated pressure lock, the rotating locking sleeve of the carabiner gate can be blocked and is thus secured against unintentional opening. Thus the Permalock combines the safety of a locking carabiner, according to category 3 of the German Alpine Club (DAV) provisions, with the user-friendliness of a normal screw or snap carabiner.



Slider Gate

A new innovation from EDELRID. This new generation of locking carabiners has an automatic locking mechanism integrated into the gate. The Slider Gate is auto-locking, quick, intuitive and can be operated with one hand. When used as a quickdraw, the Slider Gate minimizes the risk of accidental unclipping – perfect for precarious belay points, traverses or moral support on exposed sections. As there is no barrel that can get in the way, the carabiner can rotate freely in bolts and belay devices. This improves handling for better stance organisation or when belaying.

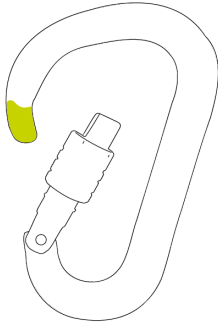


Palm squeeze mechanism

On carabiners with a palm squeeze mechanism, the safety mechanism is released by pressing the palm against a lever on the back of the carabiner. Only once this has been released can the gate at the front of the carabiner be opened using the fingers.

CARABINERS | TECHNOLOGY

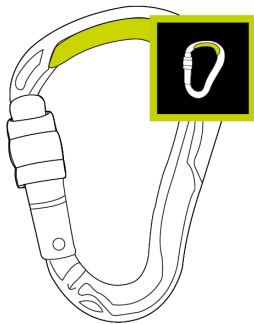
CONSTRUCTION



Keylock closure mechanism

All EDELRID carabiners are fitted with the Keylock closure mechanism. This is a closure system without a nose in the body of the carabiner. This makes handling when clipping and unclipping easier, as the carabiner cannot get caught on ropes, anchor points or gear loops.

SPECIAL CARABINERS



Bulletproof

Innovative aluminium carabiner with steel insert at the apex of the biner. The hard-wearing steel prevents premature wear from rope friction and burrs or sharp edges. The rest of the carabiner is made from aluminium, so it is still light and a joy to use.



RFID Inside

Products with integrated RFID transponders – for quick registration and effective management of PPE equipment. Using appropriate software it is possible to monitor application cycles and/or the PPE status of the product. This saves time and money while increasing safety.

GERMANY

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