



General information – English

The general information must be associated to the technical data sheet and the inspection sheet. Read both documents to have a complete information and ascertain to understand well all the information, before using the product.

Only the techniques shown without symbol of death are authorized.

Keep up with the updates and of all the additional information on the site www.lappasclimbing.com.

In case of doubt or difficulty to understand the information, don't risk, but contact:

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VIA FERRATA – EN 16869:2017

VIA FERRATA: route, generally on rocky terrain, consisting of a fixed climbing installation including a safety line where the user is not supervised.

The mere presence of a wire cable/rope on a mountain route does not constitute a Via Ferrata.

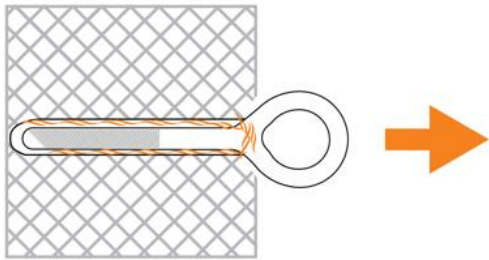
- Vertical Anchor SS 16200 | 16250 | 16300 | 16400 | 16450
- Step SS 200270 | 300270 | 400270
- Key Step SS 16200

MINIMUM REQUIRED EQUIPMENT FOR SAFETY

- CE Helmet EN 12492:2012
- CE Via Ferrata Kit with absorbing system in accordance with EN 958
- If the connecting system in accordance with EN 12277 incorporates a connector, it shall be of type K.
- Use gloves and mountain boots

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Minimum axial breaking strength



EN 16869: 2017

>15 KN

Effective strength > 15Kn

Art.

Comply with the EN 16869:2017

MODELS

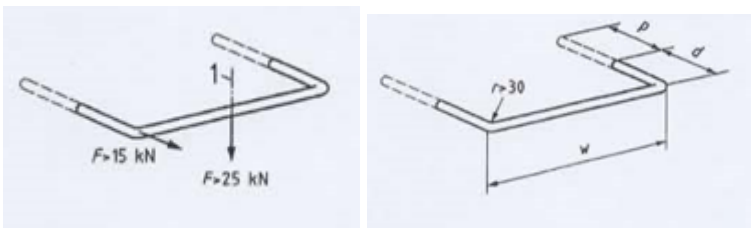
- Closed Eyebolt O Anchor SS 16200
- Closed Eyebolt O Anchor SS 16250
- Closed Eyebolt O Anchor SS 16300
- Closed Eyebolt O Anchor SS 16400

Minimum breaking strength and dimensional requirements-footsteps and pediglie

$p > 100\text{mm}$

$80\text{ mm} < d < 200\text{mm}$

$80\text{ mm} < d < 400\text{mm}$



Comply with the EN 16869:2017

MODELS

Step SS 200270

Step SS 300270

Step SS 400270

POSITIONING OF THE CONNECTOR AT THE FALL ARREST

The design of the safety system and particularly the connection between the safety line and the anchor point should reduce the improper loading of the connector at the fall arrest.

Picture A: presents an example of critical configuration. In this case a bending of the connector can occur.

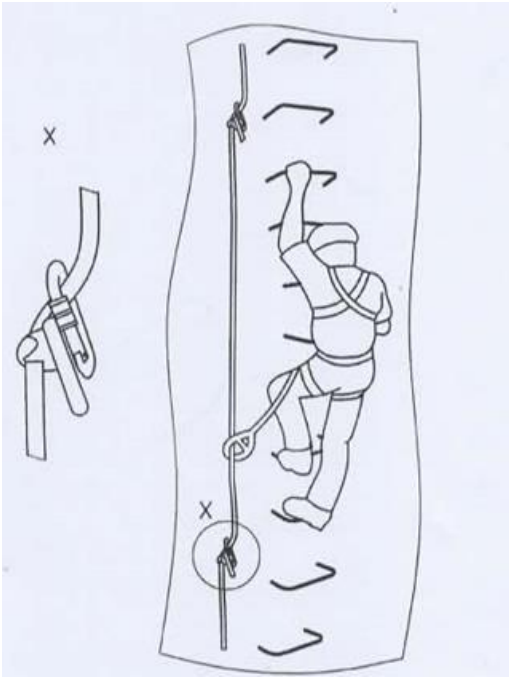
Picture B: the anchor reduces the bending of the connector (Italian system)

Picture C: configuration avoiding the bending of the connector (French system)

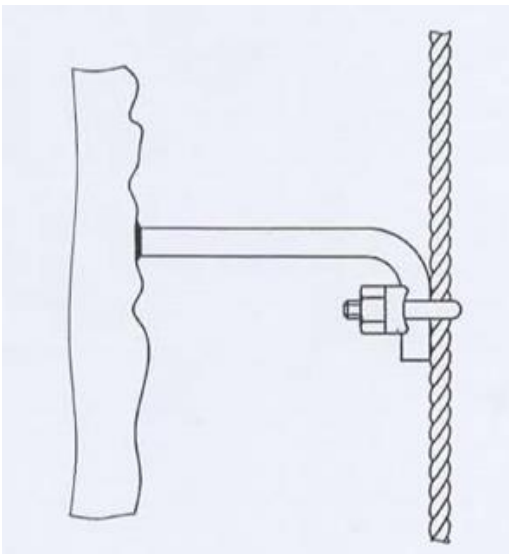
Picture D: example where an element is provided to prevent the incorrect bending of the connector

Picture E: other example where an element is provided to prevent the incorrect bending of the connector

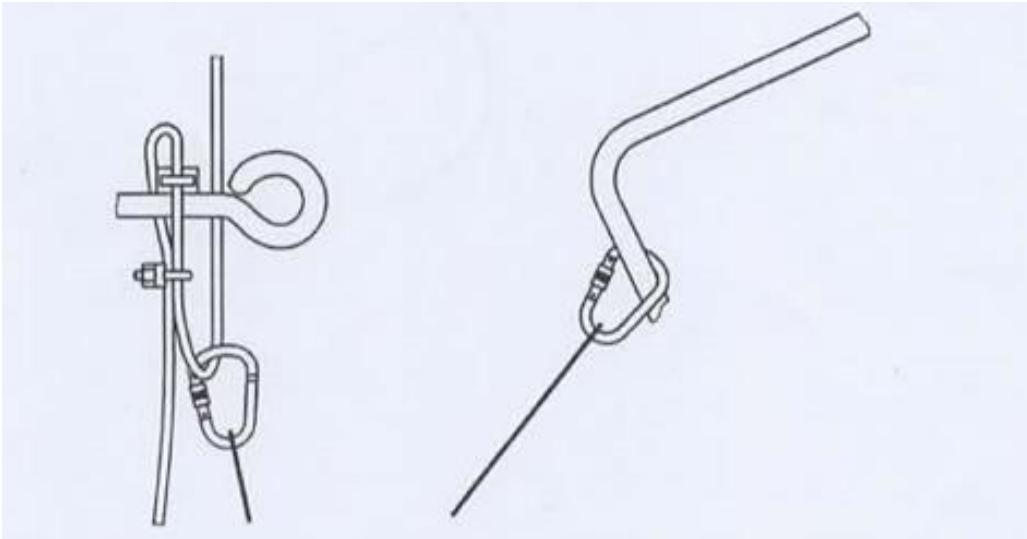
PICTURE A



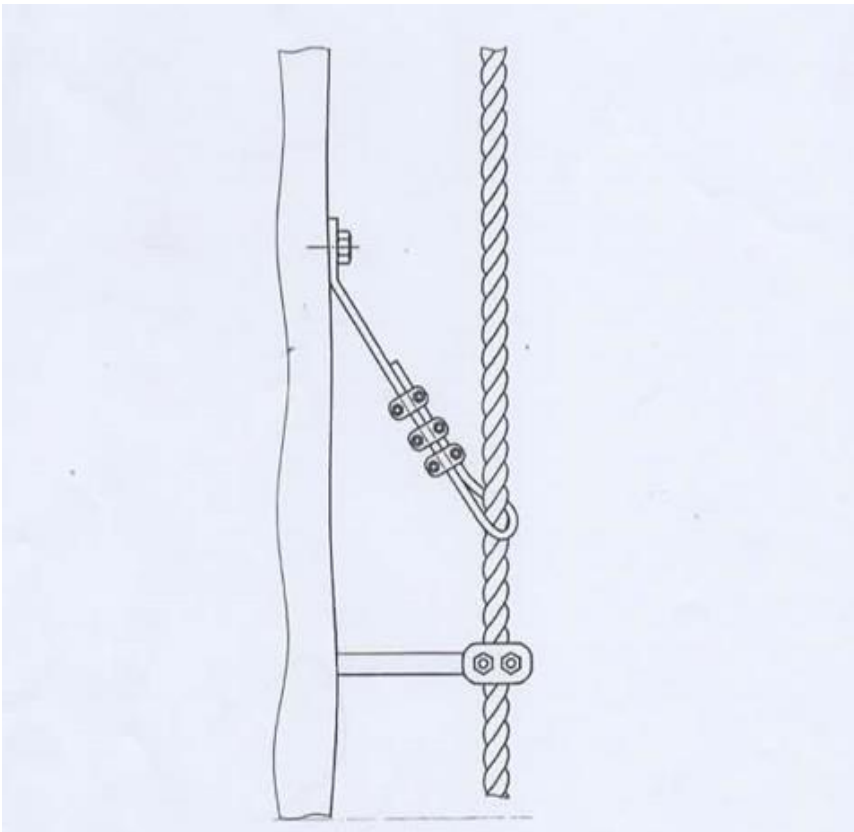
PICTURE B



PICTURE C



PICTURE D



DISTANCE BETWEEN LINEAR AND VERTICAL ANCHORS

FIGURE 1

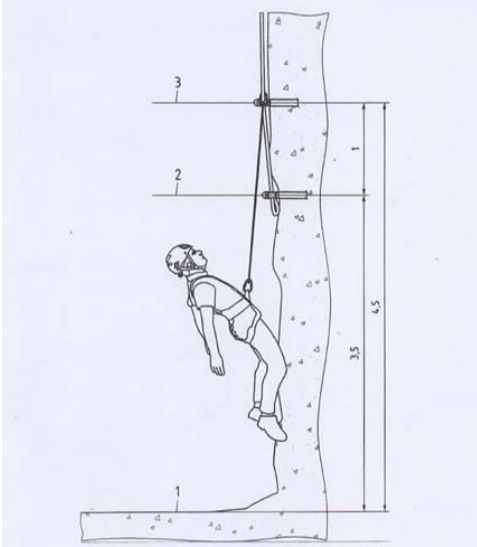


Figure 1- Distance between the first anchor point intended to arrest a fall and the ground

Key

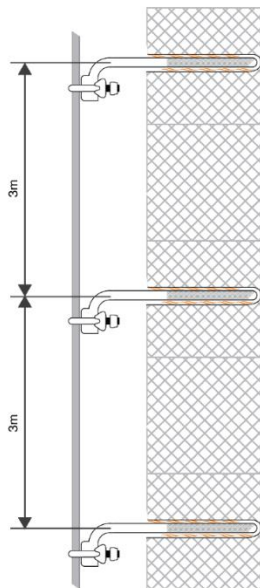
1 Ground or ledge

2 First anchor point at (3,5+?? 0,2)m

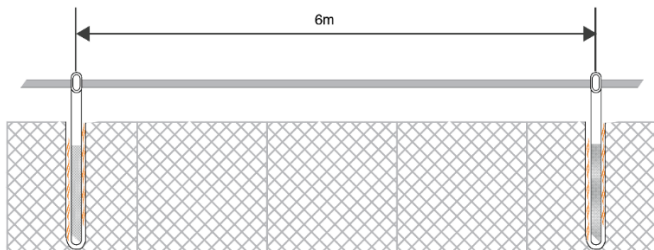
3 Second anchor point at (4,5 + ?? 0,2)m

DISTANCE BETWEEN LINEAR AND VERTICAL ANCHORS

FIGURE 2- VERTICAL



The vertical distance between two anchor points shall not exceed 3m.

FIGURE 3-LINEAR

The linear distance between two anchor points shall not exceed 6m.

SAFETY LINE TERMINATIONS

Only approved systems shall be used for cable terminations. All wire cable terminations shall conform to EN 13411-1B and EN 13411-2 with the exception of using three clamps instead of four clamps (see Figure 4).

If other types of wire-cable terminations are used they shall be used in accordance with the manufacturer's guidelines and shall fulfil the breaking strength requirements.

FIGURE 4

a) Correct placement of rope grips when connecting parallel rope ends



b) Double lung head fitting

WARNING

- Wire cables covered by a plastic sheet are not allowed. Therefore, it's also forbidden to repair a frayed cable using a rubber band or plastic tape.
- There shall be no discontinuation of the safety line greater than 1,2 m, except in low-risk areas
- Repairs or modifications of our products made outside the factory LAPPAS SA, are forbidden.
- The terminations of safety lines shall be fixed to an anchor and not directly to the rock (e.g. not into a hole)

INSPECTION AND MAINTENANCE REQUIREMENTS

The constructor shall provide instructions for maintenance (marked with the number of this standard), which shall include a statement that the frequency of inspection will vary with the type of installation, e.g. materials used and other factors such as heavy use, levels of vandalism, coastal location, lightning exposure, weather impact such as wind, snow and ice, air pollution, age of equipment.

The constructor shall provide the following elements:

- Drawings and necessary elements for maintenance
- Inspection and checking of correct operation and, if appropriate, repair of the equipment.

The instructions shall specify the frequency with which the installation or its components should be inspected or maintained.

Inspections shall be carried out regularly (at least once a year, usually at the start of the operating season and in the event of accident (by a qualified person).

NOTE

Examples of inspection points are cleanliness, sharp edges, missing parts, excessive wear and evidence of rotting or corrosion (of the safety system and progression aids), the structural integrity of the safety system (anchor points, rope clamps and safety line) and tensioning of cables.

For periodical inspections, an inspection report shall be drawn up including the following:

- Date of the inspection
- Results of the inspection indicating the defects and nonconformities observed
- Information on necessary re-inspection
- Name, address and signature of the examiner

Template

PERIODICAL INSPECTION SHEET OF VIA FERRATA
Name and Surname of the examiner:
Results of the inspection indicating the defects and non-conformities observed (As cleanliness, sharp edges, missing parts, corrosion or rotting, tensioning of cables, etc.)
Information on necessary re-inspection:
Date:
Place:
Signature:

WARNING

Keep the cables short, do not piece together cables at the “connection points”, offset the anchors so that the belay points are as far apart as possible (no further apart than 1,2m) insert some copper cables.

LADDERS AND BRIDGES – PLACEMENT OF THE

For bridges, and other progression elements, the anchor points of the safety line 1 and those of the bearing cables 2 shall be independent. See figure 5-6

- It is indispensable to indicate the number of persons that are simultaneously allowed on such elements (ladder/bridge).
- The rungs of a ladder may be used as a self-belaying anchor as long as there is no visible permanent deformation when a load of greater than 1,8Kn is applied to the middle of the rung and no breakage when a load of 12Kn is applied. See figure 5-6.

FIGURE 5 – EXAMPLE OF LADDER

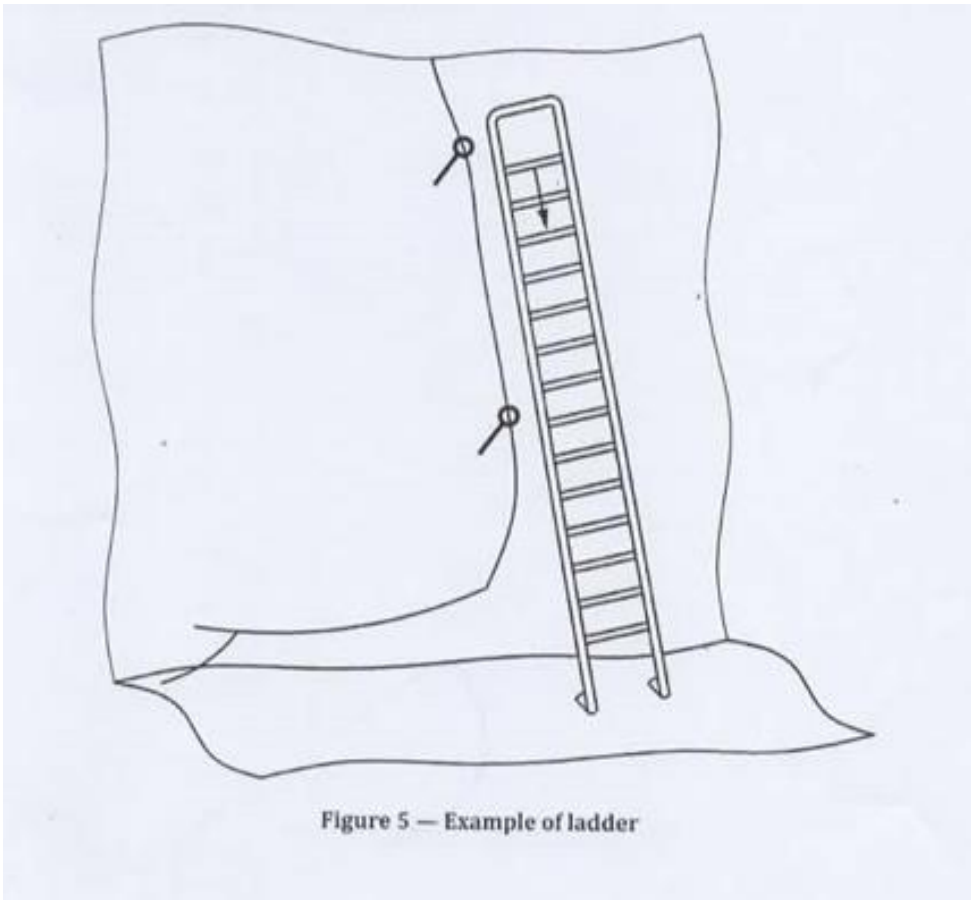
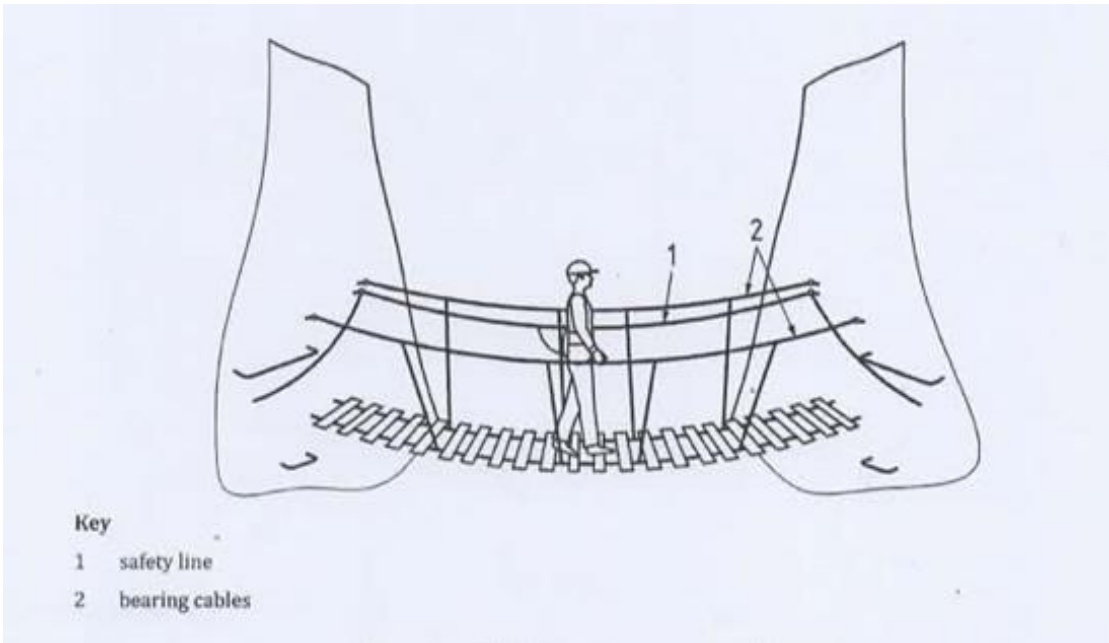


FIGURE 6 – Bridges and rope course elements



MARKING AT THE BEGINNING OF THE VIA FERRATA

At the beginning of the Via Ferrata, the following information shall be displayed in a clearly visible place:

- Advice that this Via Ferrata is based on the presumption that the users are equipped with an EAS conforming to EN 958 and a sit harness or a full body harness conforming to EN 12277.
- Advice on other equipment which are recommended on this Via Ferrata (e.g. helmet conforming to EN 12492, gloves etc.)
- Information on length, difference of altitude and approximate time of climbing.
- Information about the difficulties
- Information about fixed anchor points for climbing in rope parties, if relevant.
- Topographic description of the itinerary and information on emergency exits, bypasses of difficulty sections, if relevant.
- Information about the descent: itinerary and its expected duration
- Contact information for emergency
- Name and contact information of the operator in charge of the maintenance of the Via Ferrata, in order to allow reporting of damages.

MARKING AT THE BEGINNING OF THE RELEVANT SECTIONS OF THE VIA FERRATA

The following information shall be displayed in a clearly visible place, at the beginning of the relevant sections of the Via Ferrata:

- Clear advice where the safety line cannot be used as a progression aid
- For Bridges, ladders and other progression elements, the maximum number of persons allowed to proceed at the same time shall be indicated immediately before and after the element.
- Indication of emergency exits, bypasses of difficult sections.

MARKING AT THE END OF VIA FERRATA

At the end of the Via Ferrata, the following information shall be displayed in a clearly visible place:

- Name and contact of the operator in charge of the maintenance of the Via Ferrata, in order to allow reporting of damages.
- Contact information for emergency
- Information about the descent itinerary and its expected duration

If the Via Ferrata is practicable on both directions, the same information shall be provided on both starts of the Via Ferrata.


PRECAUTIONS FOR USE



CLEANING

+30°C/+86°F
max.

DRYING

 +30°C/+86°F
max.

MODIFICATIONS & REPAIRS


➤ Lappas S.A.

LEAG – CONTACT

lappasclimbing.com

REQUIREMENTS ON ENVIRONMENTAL IMPACT, SAFETY, AND THE ETHICS AND AESTHETICS OF MOUNTAIN SPORTS.

1. General

The consequences of further encroachment on an already sensitive natural environment and the sustainable development of the region shall be considered.

This priority dictates very stringent requirements on environmental impact, safety and the ethics and aesthetics of mountain sports.

2. Preparation for Via construction

2.1 General

Communication with all the stakeholders is vital to a smooth construction process and the acceptance of a new Via Ferrata project. It is imperative to engage these stakeholders in informal discussions concerning the details of the project.

WARNING

There is significant potential for conflict for any new infrastructure for climbing or hiking, through the initial discussions, this conflict should be acknowledged and minimized. These issues are best addressed before the true planning process where conflict resolution is not optimal, thus the preparation phase is particularly critical. This open communication is a top priority for the installation of a Via Ferrata and the most important prerequisite for the construction and acceptance of a Via Ferrata.

2.2 Preliminary concertation and consensus among stakeholders

- a) Land owners/managers
 - Determine who the land owner/manager is and how to obtain permission for the construction.
- b) Actual site users
 - Provide information on the Via Ferrata's project to the relevant site users (e.g. neighbouring clubs, forestry, hunting, grazing)
 - If the Via Ferrata or its approach pass through forestry or pasture land, the installation shall be overseen by the foresters of the farmers. The same goes for the concerns of the hunting community.
- c) Climbing community
 - Any Via Ferrata that is planned in an area that has established rock climbing or rock climbing potential requires close contact with the local climbing community.
 - Introducing a Via Ferrata in an area with established rock climbing is highly discouraged such introduction is sure to precipitate the vociferous opposition of the local climbing community.
- d) Emergency Rescue Services (Mountain Rescue)
 - Planning of a Via Ferrata shall be done with the agreement of local emergency rescue services.
- e) Protection of community and environmental values
 - The local community and government agencies (for example environmental planning or zoning entities) ought to be drawn into the planning at an early stage, especially in regards to the environmental issues.

- f) Evaluation of parking and access problems
- In any event, the parking and access shall conform to regulation, consult the local authorities.

3. Mountain Sport Aspects

3.1 General

The mountain sport viewpoint has significant bearing on the installation of a Via Ferrata, particularly on target users, the frequency of use, and safety. Conflicts with other user groups shall be minimized.

3.2 Target users

It shall be determined which user group will be targeted for a planned Via Ferrata. Different user groups have different objectives that necessitate different lengths of climbs, difficulty, variation in the difficulty of different stages, and types of installation.

3.3 Mountain danger

Mountain dangers, such as rock fall from other parties or thunderstorms (exposure), are foreseeable and can be kept to a minimum through thoughtful route selection. The same can be said for the specific risks of approach and descent.

3.4 The influence of existing rock climbs

The installation of a new Via Ferrata shall not contribute to the destruction or damage to existing routes. When in doubt, built consensus among the stakeholders (see B.2) and balance the importance of the existing route against that of a potential Via Ferrata's installation.

4. Authorizations

The installation of a Via Ferrata always requires the written permission of the land owner/land manager.

A Via Ferrata is a construction project that may require a legal building authorization in accordance with the appropriate government or municipal agency.

5. Legal considerations

5.1 Environmental protection laws

The installation of a Via Ferrata shall comply with local, national and international Environmental protection legal regulations.

5.2 Liability and duty to structural integrity

The developer/owner/party responsible for the Via Ferrata takes on the duty of ensuring the structural integrity of the installation and shall guarantee regular repair and maintenance.

6. Environmental considerations

6.1 General

The installation of a Via Ferrata should not cause damage or significant impact to the environment. Compliance with species protection laws shall be taken into account. A Via Ferrata should cease temporarily operation in the event of the endangerment of a single species or environment.

6.2 Land use regulations

To be in accordance with the regional, state, national and international standards, the applicable environmental laws and regulations shall be adhered to. A planned Via Ferrata shall be in accordance with every conversation goal. It shall be possible to bring a planned Via Ferrata into compliance. Not only shall the Via Ferrata's installation conform to the land use regulations, but other elements and activities associate with Via Ferrata's installation shall also conform, including the approach, the descent, and the parking area.

6.3 Degree of development and infrastructure

Adequate open space should remain between Via Ferrata and ecologically sensitive areas. Wilderness area also ought to be respected in order to maintain their character.

The proximity of available infrastructure and the density of Via Ferrata in a region shall be considered.

It is important to integrate the construction of a Via Ferrata into the regional development plans.

6.4 Level of encroachment

The installation of Via Ferrata's equipment shall be guided by the basic philosophy "As little as possible and as much is needed."

6.5 Quarries

Especially in the case of the Via Ferrata located no-mountainous regions, installation in quarries may provide a legitimate alternative to natural cliff venues.

6.6 Visitor levels-impact

The construction of a Via Ferrata can be employed for the purpose of controlling visitor levels so that undeveloped regions are retain low visitation rates and those regions which are prepared with tourist infrastructure receive the majority of the tourist traffic.

6.7 Duration of use

A new Via Ferrata should only be installed where it will be used on a regular basis because the installation continues to be an intrusion when it is not in use.

7. Business considerations

The project planning of construction of Via Ferrata shall take into consideration the future operation and maintenance costs.

EXAMPLES OF SIGNAGE

A	path	easy, challenging parts secured, well marked
	terrain	adequate holds and steps, little steps, short outsettled spots, climbing is possible most of the time without securing.
	securing	Wire ropes, chains, ladders, bridges, iron clamps; steps that allow a secure but a little exhausting climb.
B	path	easy to alpine, exposed spots secured, well marked
	terrain	flat and steep terrain in interplay; exhausting and power robbing passages alternate with easy, relaxing ones, Good standing and resting spots.
	securing	Wire ropes, ladders, bridges, iron clamps; steps in a combination that asks for more body control than grade A
C	path	alpine, step security, orientation ability are a prerequisite.
	terrain	steep terrain, exposed passages and vertical parts, grips and steps are small. Exhausting and power robbing passages are common.
	securing	Wire rope, ladders, bridges, iron clamps and steps. In this combination one requires more power and courage
D	path	alpine, step security, orientation ability are a prerequisite. Short parts of easy grade free climbing without securing possibilities can occur.
	terrain	precipice extreme! exposed and overhanging spots, exhausting and power robbing passages are common. For experienced climbers only.
	securing	Wire rope, ladders, bridges, hardly any iron clamps and steps. Even the difficult parts are often only secured by wire ropes
E	path	alpine, step security, orientation ability are a prerequisite. Short parts of easy grade free climbing without securing possibilities can occur
	terrain	precipice extreme! exposed and overhanging spots. Spotted with exhausting and power robbing passages. For experienced and well trained climbers only.
	securing	almost only a through passing wire rope; hardly any ladders and bridges. Steps only in exceptional cases. There are seldom any emergency exits

DETERMINATION OF THE ROUTE (PATH)

Whether constructing a new Via Ferrata or upgrading an existing installation, a basic deliberation is the determination of the route.

The technical construction details of the chosen route shall be evaluated in light of the route survey/inspection and the equipage. The route should be laid out such that the most difficult section is

close to the start, in order for the climber to evaluate the difficulty of the route and consider retreat as an early option in the event that the difficulty of the climb or physical conditioning has been misjudged. If it is not possible to arrange a difficult section at the start, it is recommended that the crux sections have emergency exists that permit traversing around the crux. Through clever route placement, the usual mountaineering dangers such as rock fall (especially from other parties) and thunderstorms (amplified by Via Ferrata installations can be obviated. Often on Via Ferrata, one finds parties of varying speeds. Via Ferrata should be laid out explicitly to accommodate the overtaking/passing of parties or otherwise deal with mismatched parties.

Route planning should address the following points:

- a) Cables laid out for traversing or rising traverses are more susceptible to snow loading than vertical cables, Traverses permit the anchors and cables to be laid such that they are under overhangs, roofs, or buttresses where they are to some degree protected from the effects or weathering, e.g. snow loading, icing, rainfall, etc. If impossible, removable cable sections shall be preferred.

- b) Snow loading is higher in low angle sections than in steep sections
- c) Zones exposed to potential rock falls (e.g. Chimneys, gullies, loose rocks) shall be considered: rock fall might endanger the Via Ferrata installation by ripping the cables and anchors and thus endanger the user.
- d) The wire cable should not contact the rock (this is particularly true for suspension (bridge/cable systems) : on one hand there is the danger of damaging the cable through rubbing on the rock and on the other hand in the event that the user shall hang on the cable r use the cable for fall arrest, the cable's contact with the rock may interfere with the belay system.
- e) The danger of lightning strike can be minimized through simple precautions:
 - keep the cables short
 - do not piece together cables
 - at the "connection points". Offset the anchors so that the belay points are as far apart as possible (but no further apart than 1,2 m), this guideline for hanging cables provides a problem free method for avoiding long lightning rods.

TESTING AND CONFORMITY

The products are tested in accordance with the standard by the DOLOMITICERT S.C.A.R.L., Z.I. Villanova 7/A– 32013 Longarone (BL).