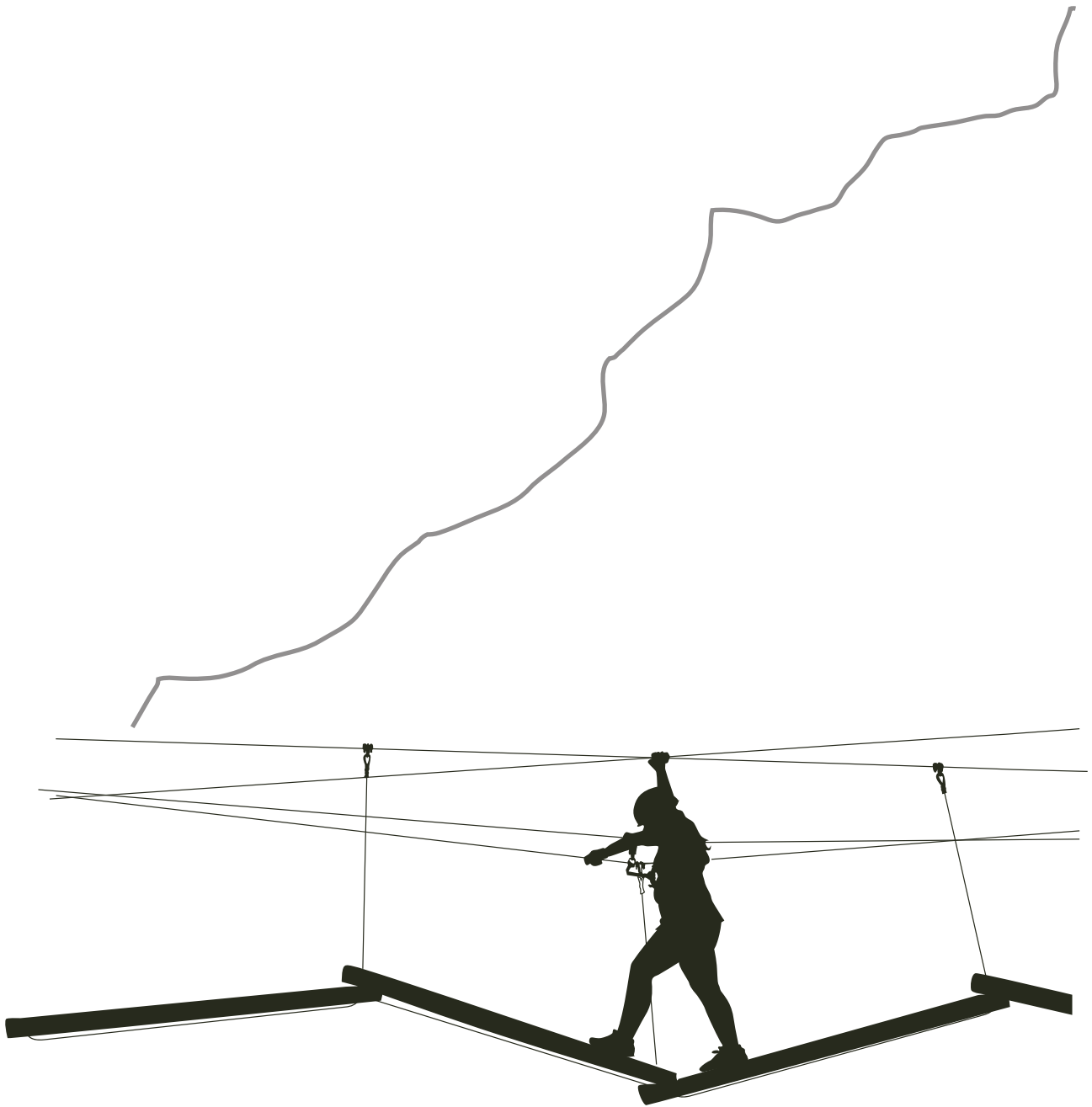


ROPES COURSES – ADVENTURE PARKS – ZIP LINES – VIA FERRATA



# KOSOVO OFF-GROUND ADVENTURE ACTIVITIES GUIDE

For everyone involved in the design, construction, operation, maintenance and inspection of off-ground adventure activities



This Off-Ground Adventure Activities Guide has been developed within the framework of the Swiss Agency for Development and Cooperation (SDC)-funded Promoting Private Sector Employment (PPSE) project, implemented by Swisscontact and the Riinvest Institute.

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# FOR WHOM IS THIS GUIDE INTENDED?

This guide is intended for individuals involved in the design, construction, operation, inspection, and maintenance of ropes courses, zip lines, and Via Ferrata [off-ground adventure activities]. It is designed to assist those working in this industry in complying with the necessary standards and the Administrative Instruction, as well as providing general advice on best practices.

## ABOUT THIS GUIDE

The Administrative Instruction [AI] 01/2024 of the Ministry of Industry, Entrepreneurship and Trade [MIET] sets out the standards and regulations that must be followed while installing and designing off-ground adventure activities, as well as when operating them. All operators, designers, inspectors, and constructors should have access to a copy of the relevant European standards, which contain technical information beyond the scope of this guide.

This Guide summarizes key information on:

- Construction and design;
- Operation;
- Inspection and maintenance; and
- Supplier selection.
- Adventure Park / Ropes Parks;
- Net Parks;
- Zip lines;
- Free fall devices [such as Quick Flights];
- Via Ferrata.

According to the scope of this guide, off-ground adventure activities are man-made artificial structures that include an activity system, a safety system, and a support system. This may include, but is not limited to the following pay-to-play recreational settings:

This document is not intended to cover artificial climbing walls, mountaineering, or caving. However, the principles outlined in this guide may be useful and, in some cases, applicable, such as in a ropes course with a climbing wall.



# 1. FOREWORD

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The tourism industry is continuing to expand and develop off-ground adventure activities such as zip lines (in terms of number, size, and complexity), net parks, and recreational pay-to-play facilities.

This guide has been developed to support all off-ground adventure activities, recognizing that while the activity structures appear to be similar, how they are used and operated can differ.

All those involved in the design, construction, operation, and inspection of Ropes Courses and Via Ferrata activities must follow Kosovo's Health and Safety law as well as the Administrative Instruction.

Because of the high potential risk associated with off-ground adventure activities in Kosovo, an Administrative Instruction has been issued for all the Tourism activities and particularly off-ground adventure activities such as ropes courses, zip lines and Via Ferrata. The standards for this are a successful attempt to gather best practices from across the European Union. Furthermore, ERCA has played a key role in compiling good ropes course practice and accident data, and it continues to lead industry developments.

## 1.1 Ministry of Industry, Entrepreneurship and Trade of the Republic of Kosovo (MIET)

The Ministry of Industry, Entrepreneurship and Trade through the Tourism Department is responsible for a wide range of duties aimed at promoting and developing the tourism sector in Kosovo. The Tourism Department is responsible for proposing and implementing tourism-related legislation, developing strategic policy documents, and promoting the internationalization of Kosovo's tourism. It supports international cooperation, and enhancing collaboration with local regions, municipalities, and NGOs. The department organizes tourism-related events, develops a tourism information system, encourages quality standards in accommodation, and supports regional tourism projects. Additionally, it regulates tourism businesses, monitors policy effectiveness, and maintains a database of tourism potentials. Within the framework of MIET, the Market Inspectorate is also responsible for overseeing economic operators involved in adventure tourism activities, ensuring their compliance with the applicable legislation.

## 1.2 European Ropes Course Association

ERCA was founded in 1998 as a German Association to develop standards and provide a platform for people working with Ropes Courses to improve safety and quality.

The success achieved through the development of standards led to an increase in the number of international members, largely because there were no effective options for professional representation in their own countries. In 2003, a decision was made to include other European countries, and the association became known as the European Ropes Course Association (ERCA).

The association includes operators, trainers, builders, and inspectors of ropes courses and off-ground adventure activities.

ERCA has certified training bodies and certified inspection bodies that provide various types of training and inspection services.



## 2. RELATIONSHIP BETWEEN VARIOUS REGULATIONS, STANDARDS AND GUIDES

Status and relationship between regulations, standards, and guides have long been a source of confusion in the off-ground adventure activities industry.

### 2.1 Health and Safety

The primary health and safety legislation in Kosovo that governs our activities—both in relation to employees and non-employees—is the Law No. 04/L-161 on Safety and Health at Work.

### 2.2 Administrative Instruction

The Administrative Instruction MIET No. 01/2024 on determining the conditions for the provision of active and adventure tourism services defines the safety requirements and criteria that professional tourism associations and business organizations must meet when offering activities such as zip lines, ropes parks, and via ferrata.

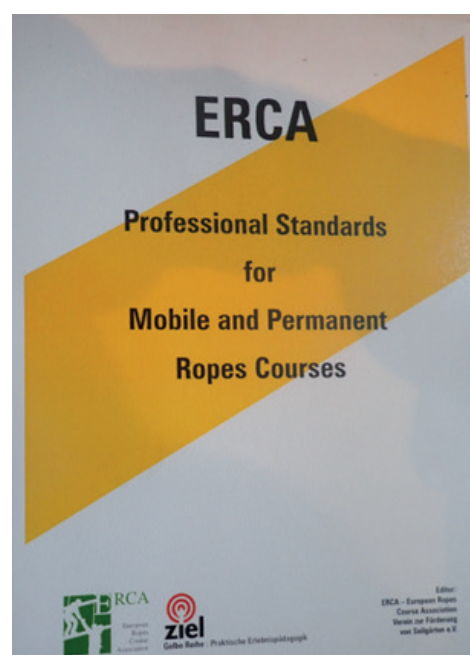
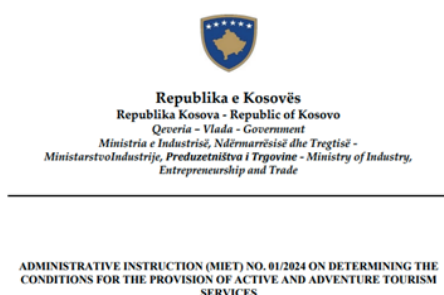
As a binding regulation, all organizations are required to comply with the provisions set out in AI 01/2024. The purpose of this instruction is to bring off-ground adventure activities in line with established safety standards.

### 2.3 Standards

The AI 01/2024 states that duty holders of rope parks, zip lines, and via ferratas must adhere to relevant standards. These standards serve as benchmarks against which a duty holder's conduct may be assessed. While these standards do not carry the force of law, they can be used as evidence in the event of an accident, serious incident, or legal investigation to determine whether appropriate safety practices were followed.

### 2.4 Guides from the industry

Guides are also issued by industry bodies, with ERCA standards being a prominent example. Although guidance is not legally binding, if a duty holder is prosecuted for a significant breach of health and safety obligations, enforcement authorities may rely on relevant industry guidance to demonstrate that the duty holder failed to meet the required standard under the circumstances.



# 3. WHAT IS A EUROPEAN STANDARD?

Standards are all around us, even if we are not always aware of them.

A simple example of a widely used standard is the A4 size for sheets of paper.

Standards are developed and defined through a process of knowledge sharing and consensus-building among technical experts nominated by interested parties and other stakeholders, including businesses, consumers, and environmental groups.

The formal definition of a standard is “a document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their result, aimed at the achievement of the optimum degree of order in given context”.

Standards are voluntary which means that there is no automatic legal obligation to apply to. However, laws and regulations may refer to standards and even make compliance with them mandatory, as is the case with Administrative Instruction (MIET) 01/2024.

## 3.1 How to Read a Standard

Standards are intended to be used by competent persons. If you do not fully understand a standard, it is important to seek help or professional advice.

It is strongly recommended to read and understand the entire document, not just the main clauses. This includes the introduction, scope, references to other relevant standards, definitions, and annexes [both normative and informative].

Without fully understanding the standard, you may apply it incorrectly and fail to meet all of your responsibilities. Whether you are a designer, constructor, operator, owner, or inspector, it is essential to understand the terminology used in EN standards. To ensure clarity, the following wording forms are used:

Requirements: **“shall”, “shall not”**

The terms “shall” and “shall not” are used to express obligations and prohibitions. They indicate that something is either required or strictly forbidden without exception.

When the standard says *shall or shall not*, compliance is mandatory.

Example: *A report containing the following information shall be prepared as part of the periodical inspection.*

Recommendations: **“should”, “should not”**

Should and should not indicate a recommended or preferred course of action, but one that is not mandatory.

Example: Periodical inspection should be carried out at least each calendar year and at intervals not exceeding 15 months.

Permissions: **“may”, “need not”**

May or need not are used when something is added to the situation.

Example: It is recognised that application of every provision of this standard may not be appropriate in all circumstances. Any deviation from the standard should provide an equal or greater level of safety [EN 15567]

Possibility and capability: **“can”, “cannot”**

Can and cannot are used when something is possible or not possible in a given situation.

Example: Safety systems can be collective or individual. Individual safety systems are classified in categories A to E.





## 4. EN 15567

Compliance with EN 15567 is a legal requirement in Kosovo under AI (MIET) 01/2024.

Therefore, it is important that those involved in the design, construction, operation, maintenance and inspection of ropes courses activities are familiar with both the guidance and the EN standards.

### 4.1 Low Rope

EN 15567 does not distinguish between high and low rope courses. However, when the standard was written, the main focus was on high rope activities, zip lines, and adventure parks.

Generally, a high rope course relies on an assisted belay, or an individual or collective safety system.

A low rope course is a generic term for elements close to the ground (generally about 1 meter above the ground) that are protected through a combination of spotting by the instructor or other group members, and impact-absorbing ground covering.

How these two safety systems function together—and the extent to which they offer protection from a fall—varies by venue and often differs for each individual low rope activity.

### 4.2 Net parks

Since 2015, net parks have increased in popularity. Although not specifically mentioned in EN 15567, they are considered by many industry professionals to be a collective safety system. On that basis, you may choose to apply EN 15567 and this guidance to your net park.

Alternatively, you may define your net park as a playground, and as long as this is how you are operating it, the EN 1176 standard for Playground Equipment and Surfacing may be more appropriate to follow.

The decision will depend on many factors, and the earlier you make that decision in the design process of a new net park, the better. To help you make that decision, you will need to ensure you have competent advice.





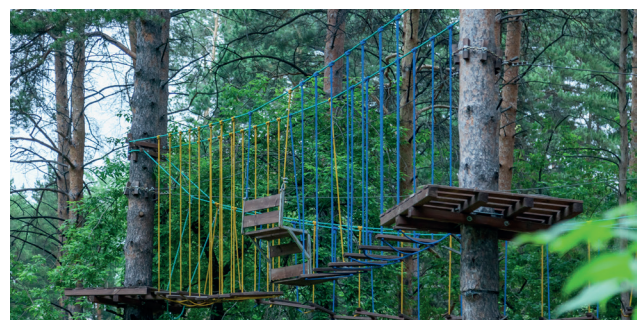
### 4.3 High Rope Courses and Adventure Parks

High rope courses are the forerunners of today's adventure parks. Primarily designed for Physical Education (PE) purposes, they have been part of the exercise curriculum in many schools across Britain and the United States, either for PE classes or as cross-training facilities for school and college sports teams. The majority of SHR courses use pole-supported layouts and are relatively small, as they are intended to cater to a selected group of users only (e.g. classes or groups of athletes).

Adventure parks comprise a variety of course layouts, including high and low ropes, depending on whether they are operated as a permanent facility (like in leisure parks) or on an itinerary basis (e.g. events and fairs), as well as on the location, the particular type of personal protective equipment (PPE) used, etc. Adventure parks are primarily intended for recreational use, aimed at day-trippers and families.

### 4.4 Zip Lines

In simplest terms, zip lining is done by utilizing the decline of a slope through a cable that starts from a relatively higher point compared to the end. Friction is reduced with a pulley, from which zip liners ride down at a slightly accelerated pace. Nevertheless, the maximum velocity of the ride will be determined by different factors such as the person's weight, the slope, or the length of the cable. The height of the cable is also affected by the structure of the line, whether it is constructed on a natural platform or an artificial one. Its length may also vary depending on the required intensity. Moreover, there are two kinds of brake systems for controlling the speed. People with heart problems, high blood pressure, or other physical issues should consult a doctor before doing zip lining.



## 4.5 Key Terms and Definitions Used in the EN 15567

### **Ropes Course**

Constructed facility consisting of one or more activity systems, support systems and safety systems with restricted access and requiring supervision.

### **Collective Safety System**

Collective safety measures refer to any preventive or protective “blanket” measures that do not require any action from participants. Collective safety measures include safety nets, water pools, and fall protection mats

### **Assisted Belay System**

Assistant Belay (also referred to as buddy system or top roping) used an anchor at the top of the climb, and requires the presence of another person (the belayer) at the bottom who is “operating” the main safety line during the time the climber tackles the obstacles.

### **Individual Safety System**

An individual safety system is used to prevent or arrest a fall, or to cushion a participant’s fall, using components that connect the harness to the safety line.

### **Supervising Adult**

Person aged 18 or above who is either the parent or legal guardian, or has the authority of the parent or legal guardian of the child participating. Must have undertaken adequate training in how to accompany and supervise child participants while taking part in the activity.

### **Critical Application**

Application where the consequences of a failure are likely to lead to serious injury or death.

### **Primary Brake**

Active or passive braking system engaged during normal operation to arrest the participant on the zip line

### **Active Braking System**

Braking system on a zip line operated by the participant or another person

### **Passive Braking System**

Braking system on a zip line operating without manual intervention, such as a net, bungee, gravity, landing mattress, etc.

### **Emergency Braking System**

Passive braking system on a zip line that controls participant deceleration upon failure of the primary brake, without causing serious injury or death.

### **Routine Visual Inspection**

Inspection intended to identify obvious hazards that can result from vandalism or the effects of adverse weather.

### **Operational Inspection**

A more detailed inspection to check the operation and condition of the ropes course materials and the equipment.

### **Periodical Inspection**

All facilities on site should be inspected by an accredited test and certification body on a regular basis, with the assessment being carried out by an inspector holding at least an inspection qualification. The inspection will result in a report, and a certificate will be issued.

### **Inaugural Inspection**

Any newly built adventure park is subject to an inaugural inspection prior to opening its doors to the public, to verify if the adventure park is built to the standards and with the correct materials.

### **Personal Protective Equipment Inspection**

All PPE should be inspected at yearly intervals, with the inspection being carried out by an equipment specialist holding the necessary qualifications. Additionally, PPE designated for use during rescue operations must be inspected after each incident.

### **Inspection Body**

A company or individual that carries out inaugural or periodical inspections, is accredited, and covered by appropriate professional liability insurance.





## 4.6 Levels of Supervision

The levels of supervision described in EN 15567 were originally designed and written for application to ropes courses and adventure parks. However, the definitions and recommendations regarding different levels of supervision are also considered suitable and good practice for other off-ground adventure activities.

Inevitably, there are some crossovers between the three levels of supervision. The level of supervision required and the types of safety systems may be set at a minimum level, but the operator's management plan should include the ability to be flexible on a day-to-day basis, depending on a range of considerations, including but not limited to:

- ✓ The information provided to participants before booking, at the point of sale, and before taking part in the activity
- ✓ The experience of the participants
- ✓ The needs of the participants
- ✓ The experience of the instructors
- ✓ The complexity of the specific safety system and the ability of the participants to use it competently.
- ✓ The daily weather conditions
- ✓ The amount of instruction the participants has received.
- ✓ The design of the off-ground adventure activity.

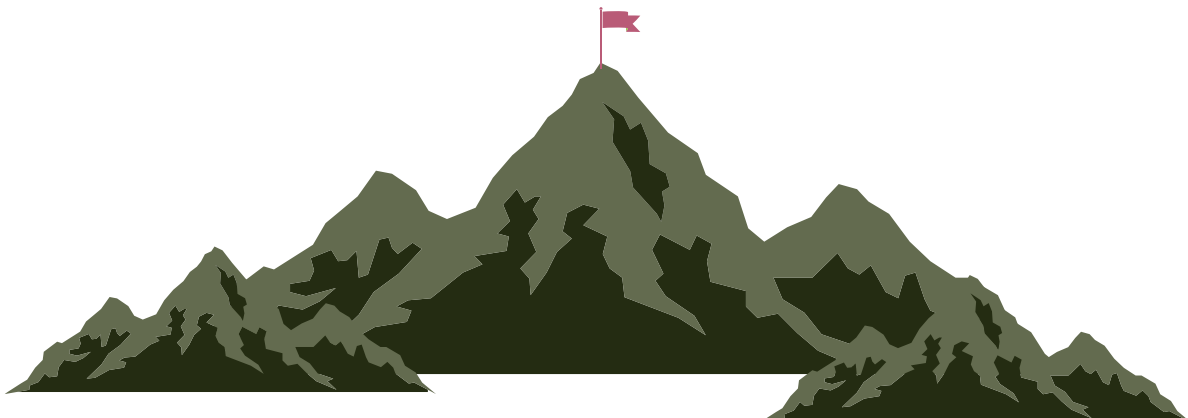
Safety is achieved through a combination of course design, course maintenance, technology, experience, participant instruction, supervision plans, and instructor competency. When these elements are well managed, all three levels of supervision can provide safe and rewarding experiences. However, any compromise in one area will require a proportionate enhancement in another.

Consider the recommended levels as a starting point and the minimum required. They should not be seen as permission to operate at those levels without further evaluation. As with all operational decisions, the supervision plan should be based on a risk assessment.

In short, a fixed model of how you supervise participants in your off-ground adventure activities may not be suitable for everyone. Flexibility may be necessary to offer different levels of supervision for certain groups or individuals.

The ratio of instructors to participants also requires careful consideration. Variations in instructor experience, participant ability, weather conditions, activity objectives, and the specific demands of a course introduce complexities that cannot be adequately addressed by simple ratios alone.

Complete a risk assessment and design your supervision plan accordingly. Use the supervision levels described in the standard as a minimum starting point, and allow for flexibility within your plan.



## 4.7 Safety Systems as defined in the EN 15567

When it comes to operating adventure parks and ropes courses, user safety is paramount. Park operators must ensure that visitors can fully focus on the physical challenge without worrying about safety issues. Today, operators can choose from a wide range of commercially available vertical safety systems. Moreover, ropes course parks are categorized according to the type of vertical safety system used, rather than the obstacles that make up the course.

The EN 15567-1/2 industry standards, which regulate the construction and operation of high ropes courses, define three types of belay systems:

- **Collective Safety Measures**
- **Individual Belay Systems**
- **Assistant Belay Systems**

### Collective Safety Measures

Collective safety measures refer to any preventive or protective “blanket” measures that do not require any action from participants. These include safety nets, water pools, and fall protection mats.

### Individual Safety Systems for Ropes Courses

Individual safety systems are not just for recreational operators offering experiences to those who wish to take part in an adventure at height with family or friends. As with assisted belay ropes courses, the opportunity for self-discovery, trust, and relationship building—as well as many other developmental topics—can be safely explored on a well-designed and appropriately supervised facility that is employing an individual safety system.

The earliest individual safety system was often referred to as “cow tails” and has been used for over 50 years. Participants were taught how to make their own cow tails using rope.

EN 15567 categorizes individual safety systems in the following way. For the individual safety system, there are five categories, starting from Category A to Category E. It is not a list from least safe [A] to most safe [E]. The standard uses the category system to help the designer or the operator of the course consider supervision requirements, briefings, signage on the course, and ground training facilities for the participants.

All categories, when the course is designed appropriately, can be operated safely. Understanding the categories will help when you read EN 15567-2:2015.

Individual safety systems including some examples:

### Individual Safety System Category A

Individual Safety System Category A is a self-closing device [karabiner] which is not automatically self-locking. An example is a screw gate karabiner. The use of an individual safety system in Category A is only allowed when all change-overs take place from a stable position of balance, such as a platform. Example of a Category A safety system:



Camp HMS  
Screw Gate Karabiner

### Individual Safety System Category B

Individual Safety System Category B is a self-closing device (karabiner) which is automatically self-locking. An example is a dual- or triple-action karabiner.



**Petzl Vertigo**  
Double action karabiner

### Individual Safety System Category C

Individual Safety System Category C is an interlocking device designed to reduce the likelihood of unintentional detachment from the safety cable. An interlocking device has at least two gates, whereby an action on one gate results in an effect on another gate.



**Edelrid**  
"Smart Belay System"

### Individual Safety System Category D

Individual Safety system category D is an interlocking device designed to prevent unintentional detachment from the safety cable. To achieve this, a device is installed on the safety cable or the mechanism operates with magnets in the gates. Examples include Clic-it® and Edelrid Smart Belay X.



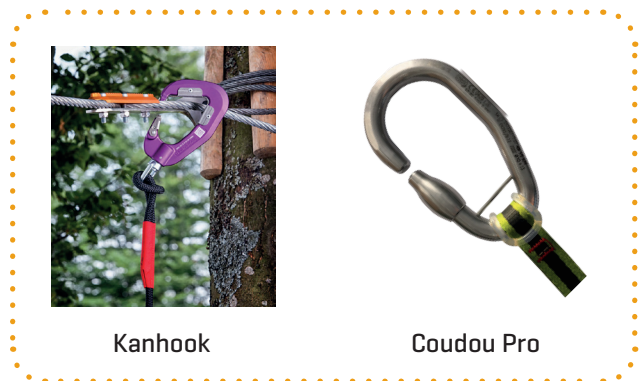
### Individual Safety System Category E

Individual Safety System Category E is a device that is permanently attached and can only be opened with a tool. With this safety system, there are no change-overs—the safety device is attached to the safety cable from start to finish. Category E safety systems often include special brackets for installation in the safety system.



Saferoller

Koalo Pouliz 3.0



Kanhook

Coudou Pro

These individual safety systems can also be used in Via Ferrata.



## 4.8 Hazards and Risks

A hazard is something with the potential to cause harm, and risk is a measurement that takes into account both the likelihood and severity of harm resulting from that hazard.

Owners and operators of off-ground adventure activities aim to create rewarding and memorable experiences for their customers. However, it would be impractical to design an off-ground adventure activity that is completely free of risk. The goal is to reduce risks to the lowest practicable level by implementing appropriate preventative measures. Health and safety legislation requires us to identify and control hazards and risks in our operations.

The introduction of EN 15567 outlines some of the responsibilities of those constructing and operating off-ground adventure activities and includes the need for a risk assessment. It acknowledges that inherent risks exist in all off-ground adventure activities, and operators should ensure participants are aware that such risks are present—yet tolerable through careful management.

Operators should provide a well-constructed facility, safe and appropriate equipment, proper supervision, and clear information, instruction, training, and assessment of participants' understanding and ability to use the equipment before allowing them to take part. Once participants have begun the activity and are either out of reach or out of sight, the responsibility and control of risk become shared. Operators must rely on participants to follow the rules and training provided, to use the equipment correctly, to supervise one another, and to alert staff if problems arise or assistance is needed.

This shared responsibility of risk should be clearly communicated to anyone wishing to take part, regardless of the facility or level of supervision. Many recreational operators ensure that participants complete an acknowledgment of risk form.

They also inform participants of the risks upon arrival, during the safety briefing, and again before engaging in the activities. For certain operations, using all or several of these methods may be advisable. The identification of risk should be clear and should allow participants to make realistic, informed, and uninhibited decisions—including the option to decline participation if they so choose. It is worth noting that, for some individuals, the perceived risk may not become fully apparent until they have seen or even started the activity.

In addition to human error, a variety of hazards may be present in off-ground adventure activities. It's important to understand that no two facilities will have exactly the same hazards, and these may also vary depending on the participants. Some common hazards found on ropes courses and via ferrata include, but are not limited to:

- ✓ **Connection errors between the harness and the safety system**
- ✓ **Falling from an activity system to the ground**
- ✓ **Falling, sliding or swinging into a solid object**
- ✓ **Objects dropped from a height**
- ✓ **Entanglement in ropes or nets, which may be more likely when helmets are worn.**
- ✓ **Hair, finger, or clothing entrapment in nets or equipment**
- ✓ **Lower limb injuries caused by bouncing on nets or by landing from zip lines**
- ✓ **Collision between participants in net parks and on zip lines**
- ✓ **Malfunctioning of the zip line braking system. When designing braking systems for zip lines, consideration must be given to mitigating the consequences of failure. These should include scenarios where the system fails to stop the rider as intended, as well as cases where the system jams and stops the rider abruptly, potentially exerting dangerously high forces on the rider and the equipment.**

## 5. CONSTRUCTION OF ADVENTURE PARKS AND ZIP LINES

Since the end of the 20th century, the popularity of ropes courses and adventure parks has been reaching new heights. In addition to their use in military and law enforcement training academies around the world, ropes courses have become very popular with people of all ages as a recreational activity. The industry has recognized this trend, and the number of adventure parks featuring both high and low ropes courses has increased dramatically across Europe.



As the commercial value of ropes courses became more widely recognized, construction techniques also became more sophisticated and considered. Many courses are now built as freestanding structures, but they can also be found in disused mines, shopping centers, cruise ships, and even on top of skyscrapers. Inevitably, these structures differ significantly from early courses. They are now highly engineered and use a wide range of modern materials and techniques in their construction. Whereas ropes courses once started in trees, they are now often built as freestanding steel structures. Every owner wants the longest and fastest zip line with the most challenging flights.

During the design phase of your project, you may want to consider whether to follow the advice and guidance in addition to EN 15567 and the ERCA standards.

Whichever construction approach you choose, you must always comply with the provisions outlined in AI [MIET] No. 01/2024 and Law No. 04/L-110 on Construction.



### 5.1 New Courses

The construction of any new ropes course or zip line should comply with EN 15567-1:2015.

### 5.2 Existing Ropes Course/ Adventure Parks and Zip lines

The date on which your course was built or significantly modified determines which version of the standard applies:

- ✓ Activities built before 2008 need not conform with any version of EN 15567
- ✓ Activities built between 2008-2015 should conform to EN 15567-1:2008
- ✓ Activities built from 2015 onwards should conform to EN 15567-1:2015
- ✓ Activities built from March 2020 onwards should conform to EN 15567-1:2015 +A1:2020

However, in accordance with MIET No. 01/2024 Administrative Instructions for off-ground adventure activities, it is expected that operators/ owners bring existing ropes courses or zip lines in line with EN 15567-1:2015. Where this is not practicable, or where historical evidence of compliance for the entire structure or certain components is unavailable, it is the responsibility of the owner/operator to ensure that the activities are safe—this may require seeking competent professional advice. In the event of an accident or serious incident, the burden will lie with the operator to demonstrate that due diligence was carried out and that all practicable measures were taken to ensure user safety. Aligning the course with the latest version of EN 15567, as it is reviewed and updated, will support this obligation and provide clear evidence of compliance.

Examples include upgrading a zip line with a braking system or updating a course with a new individual safety system.

In accordance with the AI [MIET] 01/2024, all ropes courses, adventure parks and zip lines must conform to EN 15567.

### 5.3 Adventure Parks

Ropes courses that form a part of adventure parks comprise a variety of course layouts, including high and low ropes, depending on whether they operate as a permanent facility (e.g. in leisure parks) or on an itinerary basis (e.g. events and fairs), as well as on the location, the particular type of personal protective equipment (PPE) used, etc. Adventure parks are primarily intended for recreational use, aimed at day-trippers and families.

Adventure parks situated in a forest environment are very popular, combining physical activity with natural scenery and providing an immersive outdoor experience. Course layouts that use poles as carrier structures offer a wide range of design possibilities. Although they may lack some natural aesthetics, they are by no means less challenging. Meanwhile, the number of indoor parks has been steadily increasing, as they can operate year-round. However, one major trade-off is that visitor numbers tend to plummet during the summer months, especially in periods of prolonged warm weather.



There are different systems to establish this. The simplest is the gravity brake in which the zip line slopes upward at the end—this is also known as a negative slope. With a negative slope, it is not always necessary to install a passive or active braking system. However, when the arrival speed reaches a level where the participant can get seriously injured during landing, then a primary passive braking system needs to be installed, for example a Zip Stop.

### 5.4 Zip Lines

Zip lines are becoming increasingly popular—and with that, the potential for accidents is also rising. Everyone wants the longest and fastest zip line, but constructing one requires significant expertise. A sufficient height difference between the start and finish is necessary to achieve the desired speed. Additionally, zip lines are affected by weather and wind conditions, making their construction a complex process. According to EN 15567-1, every zip line must be equipped with a braking system. There are two types: primary braking systems and emergency braking systems.

A primary brake must be in place to control the rate of deceleration in the arrival area, thereby reducing the risk of injury to an acceptable level. This brake can be either an active or a passive system.



## 6. CONSTRUCTION OF VIA FERRATA

Via Ferrata courses can attract a great deal of revenue to an area, allowing customers to access exciting vantage points and stunning views, while providing an attractive and thrilling experience to visitors in a safe manner. A Via Ferrata is an equipped climbing path that allows climbers to ascend or cross rock walls safely. The structure is composed of metal cables attached to rock anchors, with additional elements such as Tibetan bridges, footpaths, zip lines, and aids permanently fixed onto the rock and calculated according to engineering principles. Currently, the construction of Via Ferrata is at its peak in Europe. There are also different styles of building a Via Ferrata — notably the Italian, German, and Austrian styles. Due to the growth of this business, a European Standard was developed in 2017 by the CEN committee: EN 16869:2017. This standard specifies the design, inspection, and maintenance requirements applicable to Via Ferrata.

### 6.1 Requirements for the Construction of a Via Ferrata

To construct a Via Ferrata properly and in accordance with the current European Standard, its implementation must:

- Take into account any landscape constraints and the potential fragility of the environmental area affected by the project;
- Be based on a preventive analysis to assess geological risks related to the construction site;
- Necessarily include a feasibility study evaluating environmental impact, both during the construction phase and during operation;
- Be supported by a technical analysis to determine the most suitable materials, considering their chemical and physical properties [such as the path location, type of rock, altitude, and weather conditions];
- Include an assessment of objective hazards in order to define the most suitable itinerary for leisure time
- Include a construction plan that outlines a clear methodology for periodic inspections, monitoring, and necessary repairs.

### 6.2 Design and Construction of a Via Ferrata

The design and construction of a Via Ferrata require a clearly defined process that follows certain mandatory steps. The key individuals involved in such a project include:

- A Geologist; responsible for evaluating the geological risks associated with the location
- A qualified technician; in charge of the design and structural calculations of the Via Ferrata;



Professionalism and expertise across various fields are essential for both the construction and maintenance of a Via Ferrata. This includes agility and skill in working at height on mountainous terrain, knowledge of knots and mountaineering equipment, the ability to assess the quality of the rock where anchor points are placed, and experience and intuition in selecting the most suitable route.

Overall, the design and construction of a Via Ferrata involve a team of experts from various fields. In addition, construction must be carried out in accordance with EN 16869:2017 and AI [MIET] 01/2024

### 6.3 EN 16869:2017

This standard is developed by the industry, for the industry. It specifies the design, inspection, and maintenance requirements applicable to Via Ferrata. The main objectives of the standard are:

- There shall be no sharp edges on the Via Ferrata;
- A steel cable, with a diameter between 10-16 mm, must be used for the safety line [recommended is a 7x19 steel wire rope with a diameter of 12 mm];
- Wire cables covered by plastic are not allowed;
- The vertical distance between anchor points shall not exceed 3 metres;
- The horizontal distance between anchor points shall not exceed 6 metres;
- The design and placement of the safety system should minimize improper loading of connectors.



VIA 8 of Vertical Trek

More and more manufacturers are designing safety systems for Via Ferrata in accordance with EN 15567 and EN 17109. Several manufacturers of Category E safety systems [continuous safety systems] in compliance with EN 15567 have designed special brackets specifically for Via Ferrata.



#### 6.3.1. Marking a Via Ferrata

EN 16869 specifies that at the start, relevant sections, and the end of the Via Ferrata, clear and visible displays must be installed with the following information:

Information at the beginning of the Via Ferrata:

- A statement requiring users to be equipped with a harness, lanyard with EAS [shock absorber], and a helmet;
- Information on the length, altitude difference, and approximate time for climbing;
- Information about the difficulties;
- Information about fixed anchor points;
- Information about emergency exits and relevant bypasses of difficult sections;
- Information about descent options;
- Contact information for emergencies;
- The name and contact information of the operator responsible for Via Ferrata maintenance;

Marking at the beginning of relevant sections of the Via Ferrata:

- Clear advice where the safety line cannot be used as a progression aid
- For elements such as bridges, ladders, zip lines, and other progression features, display the maximum number of people allowed at the same time;
- Indication of emergency exits and bypasses.

Marking at the end of the Via Ferrata:

- Name and contact information of the operator in charge of the maintenance of the Via Ferrata;
- Contact information for emergencies;
- Information descent options and its expected time.

## 6.4 The Difficulty Levels of Via Ferrata

The difficulty of the Via Ferrata depends primarily on the steepness of the rock wall and the presence of holds and support, both natural and artificial. Different countries employ diverse scales to assess the difficulty of a Via Ferrata.



### 6.4.1 Italian Scale

In Italy, the classification of Via Ferrata difficulty is based on five main values that consider the overall challenges of the route:

- F = Easy
- PD = Slight/ Moderately difficult
- D = Difficult
- TD = Very difficult
- ED = Extremely difficult

This scale takes into account the global challenges of the excursion rather than focusing solely on specific difficulties of the Via Ferrata.

### 6.4.2 Austrian Scale

The Austrian classification, origination from a series of Via Ferrata guidebooks, ranges from A- [Easy] to E [Extremely Difficult], with the addition of the letter F to indicate difficulty levels beyond extremely difficult.

### 6.4.3 German Scale

The German classification, known as Hüsler Scale, is characterized by the suffix K [Klettersteig, which is the German word for Via Ferrata]. The scale assigns numbers from 1 to 6 to indicate the difficulty of the route, where 1 represents an easy path and 6 denotes an extremely challenging path.



<i>Austria</i> Kurt Scnall	<i>Definition of the Austria Scale</i>	<i>Germany</i> Eugen Hüsler	<i>Italy</i>	<i>Definition of the Italian Scale</i>
<b>A</b>	Easy access. Presence of many steps and footholds of good size. No physical passages. Itinerary fully equipped, presence of many pegs.	<b>K1</b>	<b>F</b>	Equipped path, with low exposure and long walking tracts. Good fixed protections, consisting mainly in metallic ropes (or chains) used only to increase safety.
<b>B</b>	Easy access. Athletic passages alternate with comfortable rest. The route is well equipped, but the spacing of steps or rungs requires a good balance.	<b>K2</b>	<b>PD</b>	Short Via Ferrata with low exposure. The itinerary usually presents couloirs, chimneys, short vertical tracts where chains, ropes, pegs and stairs help the progression.
<b>C</b>	Access is in mountain terrain, and may require navigational skills. The itinerary is steep with many athletic passages, with small holds. The equipment is safe, but spaced. It requires good physical and mental conditions.	<b>K3</b>	<b>D</b>	Via Ferrata with a medium-long length, requiring a good physical condition and technical competency. Often, the itinerary is vertical and overhangs may be present. Equipped with metallic ropes, chains, pegs and stairs.
		<b>K4</b>		
<b>D</b>	The access, comparable with level C, may require short climbing sequences. The itinerary offers many exposed vertical or overhanging section. The equipment is good, but with sections equipped only with cables.	<b>K5</b>	<b>TD</b>	The itinerary presents exposed and technical sequences; a very good physical condition and technical competence are required. The itinerary is vertical, and overhangs are climbed with few artificial aids. Equipment consist of metallic ropes, with pegs and stairs.
<b>E</b>	Difficulties of access are the same as in Level D. The itinerary may have more physical and continuous section than Level D. The equipment is limited to cable and anchors. No escape.	<b>K6</b>	<b>ED</b>	The itinerary presents several exposed and technical sequences, possibly created on purpose; in order to increase the engagement, only few artificial pegs/stairs are in place. Therefore, a very good physical condition and some climbing technical competencies are required.

There is another International Scale. It is shown in table below.

<b>A</b>	<b>path</b>	Easy, challenging parts secured, well marked
	<b>terrain</b>	Adequate holds and steps, little steps, short outsetted spots, climbing is possible most of the time without securing.
	<b>securing</b>	Wire ropes, chains, ladders, bridges, iron clamps; steps that allow a secure but a little exhausting climb.
<b>B</b>	<b>path</b>	Easy to alpine, exposed spots secured, well marked
	<b>terrain</b>	Flat and steep terrain in interplay; exhausting and power robbing passages alternate with easy, relaxing ones. Good standing and resting spots.
	<b>securing</b>	Wire ropes, ladders, bridges, iron clamps; steps in a combination that asks for more body control than grade A
<b>C</b>	<b>path</b>	Alpine, step security, orientation ability are a prerequisite.
	<b>terrain</b>	Steep terrain, exposed passages and vertical parts, grips and steps are small. Exhausting and power robbing passages are common.
	<b>securing</b>	Wire ropes, ladders, bridges, iron clamps and steps. In this combination one requires more power and courage
<b>D</b>	<b>path</b>	Alpine, step security, orientation ability are a prerequisite. Short parts of easy grade free climbing without securing possibilities can occur.
	<b>terrain</b>	Precipice extreme! Exposed and overhanging spots. Exhausting and power robbing passages are common. For experienced climbers only.
	<b>securing</b>	Wire rope, ladders, bridges, hardly any iron clamps and steps. Even the difficult parts are often only secured by wire ropes
<b>E</b>	<b>path</b>	Alpine, step security, orientation ability are a prerequisite. Short parts of easy grade free climbing without securing possibilities can occur.
	<b>terrain</b>	Alpine, step security, orientation ability are a prerequisite. Short parts of easy grade free climbing without securing possibilities can occur.
	<b>securing</b>	Wire rope, ladders, bridges, hardly any iron clamps and steps. Even the difficult parts are often only secured by wire ropes



# 7. DOCUMENTATION

In order to comply with both EN 15567 and EN 16869, the constructor of a Ropes Course, Adventure Park, Zip Line, or Via Ferrata must provide, after construction, a manual containing information about the project. EN 15567 is more specific about the type of documentation that should be on-site. The following documentation is recommended for both a Ropes Course and a Via Ferrata.

## 7.1 Documentary Obligations of Constructors

To comply with EN 15567, the manufacturer or installer of a new Adventure Park or Zip Line must provide a product manual in accordance with EN 15567-1:2015 Pt 8. This manual must contain at least the following information, along with the main product:

- A technical description of the facility and its individual components;
- Instructions regarding the correct use of the course, as outlined in Annex B of EN 15567. This should include specifications for all associated PPE and safety equipment;
- A certificate of conformity to EN 15567
- A manufacturer's declaration, containing at least:
  - ✓ Design calculations
  - ✓ Normative references
  - ✓ Exclusion of liability
  - ✓ Instructions for maintenance specifying the frequency and method by which equipment should be inspected and maintained.



CONSTRUCTION DOSSIER  
ADVENTURE PARK KAKOPETRIA, CYPRUS

17.0.2012  
VERSION 001/001/01.0



SOP AERIAL ADVENTURE  
TUI HOLIDAY VILLAGE

Document Number: TAG-00011-0001  
Document Name: Aerial Adventure  
Document Version: 01/0001/0001

**Standard Operating  
Procedures  
Aerial Adventure  
TUI Holiday Village**

## 7.2 Documentary Obligations of Operators

In addition to the documentation required under AI (MIET) 01/2024, EN 15567-2:2015 mandates that an operator maintain the following documentation:

- Name and address of the owner and operator;
- A document indicating that periodic inspections are carried out by an inspection body;
- List of site personnel, their functions and qualifications/competence;
- Evidence of public and employer's liability insurance;
- Daily inspection records;
- Accident and incident reports;
- Personal Protective Equipment inspection register and operation log;
- Risk assessment and management plan;
- Instructor and rescue training documents, demonstrating instructor competence in their role;
- Participant safety instructions;
- Manufacturer's product manual (Technical Construction Dossier);
- Safety and emergency plan;
- Current tree assessment report (if relevant);
- Safety instructions (Standard Operating Procedures (SOPs)).

## 8. INSPECTION AND MAINTENANCE

A comprehensive inspection regime is essential to ensure that any off-ground Adventure Activities course remains fit for purpose and safe to use.

As older Ropes Courses and Via Ferratas approach the end of their serviceable life, and with new courses receiving large numbers of recreational users, a professional approach to the inspection process is crucial. Even for off-ground Adventure Activities at smaller venues catering to comparatively fewer participants, inspection and maintenance need to be systematic and ongoing.

To facilitate all levels of inspection and ensure compliance with EN 15567, the constructor of the off-ground adventure activity must provide instructions for maintenance and inspection (including frequency), as well as a comprehensive set of drawings and design calculations.

Drejtoria e Akreditimit e Kosovës [DAK] is the National Accreditation Body for Kosovo. They are appointed by the government to assess and accredit organizations that provide services such as certification, testing, inspection, and calibration. As of the publication of this manual, there is no option for an Inspection Body in Kosovo for off-ground Adventure Activities to be accredited by the DAK under the scope of EN 15567 and EN 16869.

Consequently, the most common route for inspection bodies to be audited, verified, and their qualifications checked is through the European Ropes Course Association [ERCA].



ERCA audits against a set of its own quality and audit criteria, EN 15567, and any other relevant standards or guidance. In addition, ERCA provides inspectors with compulsory training and ongoing professional development specific to Adventure Parks, Ropes Courses, and Zip Lines. AI [MIET] 01/2024 stated that the inaugural and periodical

inspection needs to be done by an inspection body accredited in accordance to ISO17020:2018 or by an ERCA-accredited inspection body.

EN 15567 specifies six different types of inspection:

- ✓ Inaugural inspection
- ✓ Periodic inspection
- ✓ Operational inspection
- ✓ Routine inspection [visual]
- ✓ Inspection after course alterations
- ✓ PPE inspection

### 8.1 Inaugural Inspections

AI [MIET] 01/2024 stated that when a new ropes course is built, but before it is put into use, an inaugural inspection must be carried out. According to AI [MIET] 01/2024 an operator is not allowed to operate an off-ground adventure activity without an inaugural inspection. The inaugural inspection must be conducted by a fully independent inspection body. By definition, such an inspection body must have had no involvement in the design, construction, or maintenance of the off-ground adventure activity.



The Inaugural inspection involves carrying out and documenting the following:

- A visual inspection;
- A review to ensure that design calculations and /or tree strength assessment are available;
- A review of the current arboreal assessment to confirm that all trees used as structural supports have been deemed safe for use;
- Verification that the course has been constructed in accordance with the design drawings. This is also referred to as an assessment of conformity to design;
- A functional test conducted at height by the inspector. This means the inspector must possess comprehensive knowledge of ropes courses and their use, and be qualified and competent to work at height;
- A documentation review of all materials.

## 8.2 Periodical Inspection

A periodical inspection should be carried out by an independent inspection body, also referred to as a third-party inspection. It must be performed at least once per calendar year, with a maximum interval of 15 months.

The purpose of this inspection is to determine the overall safety level of the equipment, foundations, and surfaces.

The periodical inspection also presents a valuable opportunity for the operator[s] to be present, allowing them to answer or ask questions and enhance their understanding.

The periodical inspection involves carrying out and documenting the following:

- **Visual inspection;**
- **Functional test;**
- **Determination of the replacement status of worn parts;**
- **Verification of the current tree assessment report;**
- **Verification the PPE inspection report;**
- **Inspection all manufacturer instructions and maintenance records**

After the inaugural and periodical inspections, a comprehensive inspection report should be provided as part of the inspection. As a minimum, this report should include:

- **Date and location of the inspection;**
- **Who carried out the inspection;**
- **A summary of elements inspected;**
- **Results of the inspection, including any observed defects;**
- **Recommendations for any remedial actions;**
- **Any concerns regarding the continued use of any part of the facility;**
- **A copy of the inspection report, which should be stored with the technical documentation of the off-ground adventure activity.**

### 8.3 Operational Inspection

This inspection should be carried out by the operator every 1–3 months or as directed by the constructor.

Generally speaking, the constructor's recommendations should be considered the minimum requirement. Operators may determine that more frequent inspections are necessary, based on their experience and empirical evidence.

Examples of elements to be considered as part of visual and operational inspections include cleanliness, condition of ground surfaces, sharp edges, missing components, excessive wear [particularly of moving parts], and the structural integrity of the safety system.

An operational inspection should be as comprehensive and thorough as a periodical inspection. This requires the inspector to be as competent and knowledgeable as they would be for a periodical inspection. A thorough understanding of wire rope discard criteria is invariably essential for an operational inspection. Inspectors may also need to assess the degree of decay in a timber pole.

### 8.4 Routine Visual Inspection

This is carried out and documented before opening the course each day the facility is to be used. This check involves a visual survey of critical components and an assessment of the general appearance of the course and the surrounding environment. Elements to consider can reasonably be grouped into four categories:

- ✓ **Weather damage (storms, lighting)**
- ✓ **Vandalism**
- ✓ **Animal damage**
- ✓ **Wear and tear**

The routine visual inspection is often performed by an appropriately trained instructor. These daily inspections must also include any PPE and safety equipment used during the activity.

## 8.5 Inspection of Personal Protective Equipment

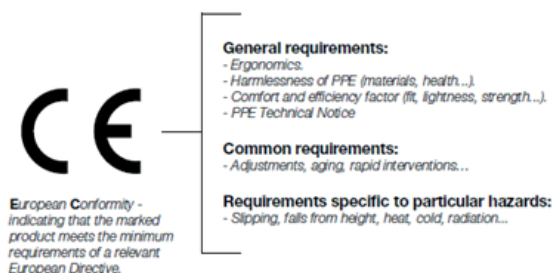
Personal Protective Equipment (PPE) is used in every Adventure Park, zip line, and Via Ferrata for the safety of participants. PPE includes harnesses, helmets, lanyards, ropes, zip pulleys, etc.

The European Directive 2016/425 of 21 April 2018 defines the “essential requirements” that PPE must meet at the time of manufacture and before it is placed on the market. These include:

- The general requirements applicable to all PPE;
- The additional requirements specific to certain types of PPE;
- The additional requirements specific to particular risks.

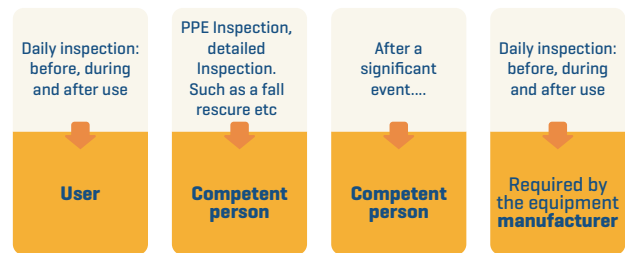
The Directive outlines both Essential Health and Safety Requirements (EHSRs) for PPE and the conformity assessment procedures, which—for products designed to protect against more serious risks—may require the involvement of a so-called “Notified Body.”

Notified Bodies are institutions appointed by Member States and serve manufacturers when the Directive requires third-party involvement, such as EC type examination, approval, and monitoring of quality assurance systems.



Inspection of fall protection equipment is a response to risk analysis and is part of the overall precautionary measures. This essential action, which ensures the proper functioning of the safety chain, complements all other steps taken to optimize user safety.

This legislation also requires that users are trained in the correct use of PPE and that regular inspections of the equipment are carried out. There are four levels of inspection.



A competent person is someone knowledgeable of the current periodic examination requirements, recommendations and instructions issued by the manufacturer applicable to the relevant component, subsystem or system

The EN standard EN 365:2004 states that:

A competent person should be capable of identifying and assessing the significance of defects, should initiate the corrective action to be taken and should have the necessary skills and resources to do so.

*A competent person may need to be trained by the manufacturer or his authorized representative on specific PPE or other equipment.*

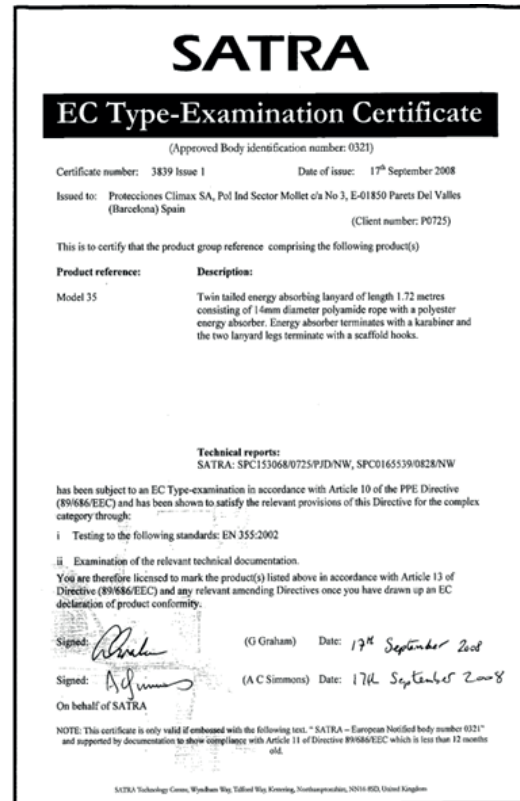
Administrative Instruction [MIET] 01/2024 states that all the equipment used in off-ground adventure activities must have a CE mark and need to be accompanied by a Declaration of Conformity. The CE mark indicates that the equipment meets the minimum requirements of the **PPE Directive**. The equipment will have been tested and certified by a **Notified Body** according to the relevant EN standard. The numerical code [e.g. 0120] following the CE mark identifies the testing organization/notified body [test house].



The EU Declaration of Conformity is the document that affirms the product satisfies the essential requirements of the applicable legislation. By drawing up and signing the EU Declaration of Conformity, the manufacturer assumes responsibility for ensuring the product complies with the relevant EN standards to which it was tested. This test is outlined in an EC Type Examination Certificate.

The Declaration of Conformity Certificate is held by the manufacturer or distributor of the product. When buying directly from the distributor, users will receive paperwork stating the EN standards to which the equipment complies. If items are bought singly from a shop, they typically come with the manufacturer's instructions or recommendations.

The manufacturer must retain a copy of the Certificate of Conformity for 10 years after the product has been placed on the market.



# 9. OPERATION

For Ropes Courses, EN 15567-2:2015 “Sport and Recreational Facilities – Ropes Courses - Operation Requirements” specifies operational requirements to ensure an appropriate level of safety and service when used for recreational, training, educational, or therapeutic purposes. This document is relevant to all operations on both new and existing Ropes Courses. Although the standard was developed for Ropes Courses, it also applies to Via Ferrata when conducting off-ground adventure activities in a group session.

It is advised that all off-ground Adventure Activity operators refer to this EN standard.

## 9.1 Good Practice

Identification of associated risks and the development of operating procedures is required by both the Health and Safety authority and EN 15567-2:2015.

An assessment of the hazards and risks specific to your operation and each type of activity should be conducted. During this assessment, you may identify individual sections or elements of the off-ground adventure activity that present specific risks requiring control. These risk assessments inform the information, instruction, and training provided to employees and help develop appropriate operating procedures [SOPs] that balance the excitement or benefits of the activity with its safe use.

Participants have certain obligations, which will vary depending on their age and experience. You may want to consider participant attitude and behavior when determining how much self-responsibility will be appropriate.

Participants should be briefed on maintaining their own safety and the safety of others at all times. They must be instructed to comply with all safety instructions and be reminded of them when necessary. Providing this information at the time of booking, as well as through signs at appropriate locations on each activity, will strengthen and reinforce the briefings delivered by instructors.

No person should participate in any off-ground adventure activities while under the influence of alcohol or drugs, or when pregnant. Participants should also be reminded that certain prescription medications can inhibit safe participation in off-ground adventure activities.

## 9.2 Identification of Appropriate Instructor Competence

Instructor competence is likely the most significant factor influencing the safety of off-ground adventure activities. There must be a system for identifying and verifying the required competence of instructors. Technical competence, including measures to minimize human error and its consequences, is essential. Additionally, instructors must know how to supervise participants, intervene to prevent incidents or unsafe situations, and provide coaching and encouragement.

An induction process for instructors is likely required and should include, but is not limited to:

- **Company health and safety policy**
- **Roles and responsibilities**
- **General site safety policies including**
  - ✔ **Fire procedures**
  - ✔ **Emergency action plans**

- Reporting of accidents and incidents
- How equipment is stored, including quarantining procedures
- Course paperwork and documentation
- Booking processes
- Participant limitations

### 9.3 Instructor Training

Operators should ensure that instructors are equipped with the skills and knowledge necessary to manage any reasonably foreseeable and relevant occurrences on each off-ground adventure activity they deliver. This often requires job-specific training tailored to the particular off-ground activity and should include at least some practical incident and accident response scenarios. Training records should be maintained. Rescue techniques should be practiced regularly, along with first aid and other scenarios to ensure familiarity.



Any qualification system for off-ground adventure activities should address the following aspects of training:

- Individuals overseeing and delivering training must be competent and appropriately qualified
- Full records of all training courses, including the syllabus or training programme, must be maintained
- Detailed records of instructors' ongoing experience should be kept

- A thorough assessment of training practices and instructor competence should be conducted
- Ongoing monitoring and professional development of instructors in their roles is essential

In the AI [MIET] 01/2024, it is stated that employees operating a Ropes Course must be trained in accordance with the relevant standards. The European Ropes Course Association [ERCA] offers a training scheme for Ropes Courses and zip lines. ERCA-certified training bodies are audited regularly and employ only certified and qualified trainers who follow the ERCA training syllabus.



### 9.4 Identification of Competence

Off-ground adventure activities are increasingly offered to a wide range of groups and individuals, often in a recreational, pay-to-play context. When possible, a policy of identifying the participant's competence, experience, special needs, and physical or medical conditions in advance is advisable. However, for pay-to-play operators, this may often be impractical. Where feasible, and given varying participant competence levels, it is equally acceptable to:

- Select and advise on the appropriate level of difficulty for an off-ground adventure activity [especially Via Ferrata] based on the client or group

In the absence of prior knowledge of a participant's experience and competence, operators should assume that neither exists. This is particularly important when dealing with children.



## 9.5 Acknowledgement of Risk

It is encouraged to inform participants of the nature and extent of the risks involved, and what to expect from the activity. This is especially important for participants who may have no prior experience or concept of such activities.

While it may be unreasonable to expect operators to detail hazards in their primary advertising, it is reasonable to provide this information at the time of booking, upon arrival, or during the activity briefing. Risk identification should be clear and should provide participants with realistic and unpressured options to decline participation if they so choose.



## 9.6 Human Error Accidents

Serious accidents involving off-ground adventure activities remain rare. However, when accidents do occur, human error is a leading contributing factor. These errors can arise from various causes, including incompetence, task overload, fatigue, and—most significantly—distraction. Distraction, in particular, can be more difficult to detect than mechanical failure, making it more challenging to prevent.

This guide covers 3 interrelated areas: the job, the person and the organization. Simply put:

- What are the people being ask to do?
- Who is doing it?
- Where are they working?

The table below provides an overview of these factors

Job Factors	Person Factors	Organization Factors
System/equipment interface	Physical capability & condition	Work pressures
Routine or unusual task	Fatigue (Acute or chronic)	Supervision/ leadership
Divided attention	Stress/ morale	Communication
Inadequate or inappropriate procedures	Work overload	Manning levels
Working environment (noise, heat)	Competence	Clarity of roles and responsibilities
Time available/ required	Motivation	Consequences of not following procedures
Tools appropriate for task		Organizational or safety culture
Communication		



Below you will find some guidance on how to reduce human error at your site and during off-ground adventure activities.

**Ensure instructor competence.** Competence should be established through appropriate training and relevant experience, as defined by the operator's risk assessment and health and safety policy.

**Deploy staff carefully.** It is almost inevitable that an instructor performing a highly repetitive task will eventually lose concentration, causing their mind to wander and increasing the likelihood of mistakes. If the task is safety-related, the consequences can be severe. Repeatedly assigning the same instructor to the same task each day is likely to lead to failure.

**Avoid long periods of the same repetitive task.** Staff should be deployed in ways that minimize prolonged exposure to repetitive tasks. While ensuring employees take regular breaks is one solution, a more effective approach is to rotate instructors between tasks. For example, an instructor assigned to the start of a zip line can rotate to the landing area after an hour.

**Use a [mental] checklist.** Preparing a participant for an activity often involves multiple steps and may require coordination among several instructors. As part of the training scheme, instructors should be encouraged to follow a "mental checklist"—a sequential review of each step in the safety chain—to ensure no critical element is missed.

A good example is **C.H.E.C.K.**, a useful acronym instructors can use before allowing a participant to step off the zip line start platform:

- C Clothing** - [to include hair, pockets empty, jewelry and footwear]
- H Harness/helmet** - Are they correctly fitted?
- E Environment** - Is the zip landing area clear? Are there any spectators about to enter the area? Is the weather about to change?
- C Connections** - Are they safely connected to the zip line? Perform cross-checks.
- K Knowledge** - Do they have the correct knowledge to safely take part in the activity [for example, individuals in a Via Ferrata]?

The key point is not to give the “GO” signal just because the final step in the sequence was completed—instead, instructors must verify that all steps have been fully and correctly addressed.

### **Avoid Task Overload and Concentration Loss**

The leading cause of human error accidents appears to be instructor distraction. This may result from being preoccupied with other relevant tasks or overloaded with multiple responsibilities. The risk increases significantly when an instructor is tasked with managing too many things at once. However, some serious incidents have occurred simply because instructors were distracted by completely unrelated thoughts — they were daydreaming. It’s important to develop practices and procedures that help keep instructors focused on the task at hand.

**Monitor staff regularly.** An effective way to reduce human error is for management to routinely observe staff in their everyday work environment.

**Address poor practices.** When poor practices are noticed, they should be corrected immediately. If the same issues appear across multiple staff, this should prompt a review and update of initial or refresher training.

**Nurture your staff.** When instructors see that management genuinely cares about safety, it reinforces the value of their daily work. On the other hand, if they feel that management is indifferent, their own motivation and care may decline over time. And when instructors stop caring, mistakes are bound to happen — and those mistakes can lead to serious accidents.

It is crucial to give proper attention to both equipment and procedures that minimize the likelihood of human error failure. Preventing such errors means ensuring that the right people, with the right training and equipment, are working under the right conditions — safely, effectively, and satisfyingly!

## 9.7 Equipment

Equipment selection will depend on the nature of the off-ground adventure activity. Some aspects may become company policy, such as whether to use a sit harness or a full-body harness in adventure parks. According to EN 15567, it is a requirement that the constructor of the adventure park or zip line provides, within the owner’s manual, a list of the equipment required to operate the activity. It is also advisable to seek competent advice, as the choice of equipment is vast — getting it wrong can be a costly mistake and may lead to accidents or other unintended issues. Below is a list of considerations [not exhaustive]:

- **The choice between harness types should be carefully evaluated.** In recent years, there has been a shift toward the use of full-body harnesses in off-ground adventure activities. However, it is too simplistic to suggest that a full-body harness is always preferable. For Via Ferrata, a sit harness can be safe and appropriate.
- **In some activities, there may be an unacceptable risk of head injury, which can be adequately mitigated by wearing a helmet.** The most suitable helmet may not always be a standard climbing helmet.
- **The AI [MIET] 01/2024 includes a list of equipment to be used for each off-ground adventure activity.**

Personal Protective Equipment (PPE) should be inspected in accordance with the manufacturer’s recommendations, and a record of these inspections should be kept in line with relevant legislation.

Personal Protective Equipment should also be used strictly in accordance with the manufacturer’s instructions.

## 9.8 Participants' Morphology

Participant size and weight may be critical in determining whether they can safely take part in an activity. This is especially important on large zip lines and free-fall drops. It is recommended to weigh participants for these activities.

## 9.9 Safety Briefings

For all off-ground activities, there will be essential information participants must know, understand, and remember to participate safely. This can range from two or three simple instructions — such as “hold here” or “keep your head to one side” — to a more extensive set of safety rules and instructions, such as how to call for help, how to navigate elements in an adventure park, how to follow a Via Ferrata route, or how to operate the safety system.

When designing your safety brief, you will need to ensure that you have taken into account the instructions for the activity from the constructor, as well as specific instructions from the manufacturers of individual safety systems. In addition, the level of training and information provided to participants in the briefing should be determined by the operator's risk assessment. EN 15567-2:2015 outlines the requirements for a safety instruction in sections 6.1 and 6.2.

Below is a summary — but keep in mind that you may need to include more information based on manufacturer instructions and your own risk assessment:

- An explanation of the off-ground adventure activity and the risk of serious injury, as identified in the operator's risk assessment. These risks may extend beyond just the safety systems.
- Explanation of the safety instructions.
- Identification of instructors and how to communicate with them in case of an accident or when the participant needs help.
- An explanation that, at any time, any child participant must be within the line of sight of either an instructor or an adult participant.
- Explanation and demonstration of the correct use of the personal protective equipment.
- Explanation of markings or signage placed within the off-ground adventure activity.
- Explanation of the responsibilities of the supervising adult.



You may also wish to consider when and how this information is delivered to the participants. For simple briefings related to off-ground adventure activities where instructors control the majority of the safety aspects [e.g., zip lines], a basic verbal briefing just before participation may be sufficient.

For more complex off-ground adventure activities where participants are more responsible for their own safety [e.g., Via Ferrata], you should consider delivering the information in multiple formats and at multiple times. Participants must have heard, understood, and remembered the information. They should also be able to perform any required skills or methods you expect while taking part in the activity. You should consider the content and the delivery of the safety briefing as important and as critical as your PPE checks, course inspections and all other aspects of your safety plan.

This information can be delivered in different ways:

- **On your website;**
- **On signs and briefing points at your venue;**
- **Briefing videos;**
- **Verbally by instructors;**
- **Special signs at the start of elements.**

### 9.10 Use of an Adult Supervisor

For some off-ground adventure activities, EN 15567 requires that a child be supervised by an adult while at height. It should be noted that the adult is not always required to be at height with the child; supervision from the ground may be acceptable based on a risk assessment.

What is clear is that arbitrary enforcement of adult supervision can actually create more problems than it solves. Careful consideration must be given to why you are requiring an adult to participate, who that adult is, whether they have been trained to take responsibility for the child in their care, and whether their capability has been assessed.

EN 15567 also requires the following for adult supervisors:

- **Training for supervising adults shall include the safety instructions;**
- **Instruction on correct attachment to the safety system, with particular focus on changeovers performed by the child in their care;**
- **Advice on the appropriate method for observing the child in their care;**
- **In case of conflicting advice, it must be made clear that the instructor's guidance takes precedence;**
- **The training for supervising adults shall be assessed through questions.**

EN 15567 further states that the decision on whether the supervising adult accompanies the child from the ground or at height shall be made by the operator, based on their risk assessment. The method of observation which the supervising adult shall use while accompanying the child in their care shall be based on the risk assessment.

### 9.11 Technical Advice

If an operator does not have internal expertise to advise on safety, industry, and operational matters, they can appoint an external Technical Advisor. The principal role of a Technical Advisor is to assist in making relevant and informed management decisions. A good Technical Advisor can bring significant benefits to an operation by offering support and enhancing operational decision-making. Before appointing an external Technical Advisor, consider the following:

- **Ensure they have extensive practical, theoretical, and technical knowledge of a wide range of off-ground adventure activities;**
- **Ensure they have knowledge and experience in the operation of off-ground adventure activities;**
- **Ensure they are currently active in the industry and stay up to date with developments;**
- **Ensure they have a proven track record in relevant course activities.**

You may choose to appoint Technical Advisors who hold one of the following certifications:

- ✔ ERCA Certified Trainer
- ✔ ERCA Certified Inspector
- ✔ Certified Mountain rescuer

However, it is important to remember that none of these qualifications alone qualifies or assesses the holder to act as a Technical Advisor.

If you intend to appoint a Technical Advisor to assist with your duties under Health and Safety law and related legislation—including the review of risk assessments or safe operating procedures—you must ensure that they are competent for this role in addition to holding appropriate activity and technical qualifications.

To help you make decisions, a common acronym used to assess whether a person is competent to assist with your Health and Safety duties is:

- S Skills**
- K Knowledge**
- A Attitude**
- T Training**
- E Experience**

You should consider the skills, knowledge, training, and experience they have with regard to health and safety, in addition to their activity and technical qualifications.



## 9.12 Emergency Action Plan

EN 15567 requires that you have an emergency action plan for ropes course activities, and this also applies to Via Ferrata when operating it as a group session. It would be typical to include this as part of the introduction procedure. Consideration should be given to the safety of all participants, not just those injured or immediately affected. Additionally, plans should account for the evacuation of all personnel and visitors from the site. The need of regular [documented] practice, refresher training, and full reviews of emergency action plans and rescue systems cannot be overstated.

