SLOVENSKI STANDARD
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Športni in rekreacijski pripomočki - Plezalni parki - 1. del: Konstrukcijske in varnostne zahteve

Sports and recreational facilities - Ropes courses - Part 1: Construction and safety requirements

Sport- und Freizeitanlagen - Seilgärten - Teil 1: Konstruktion und sicherheitstechnische Anforderungen

Structures de sport et d'activités de plein air - Parcours acrobatiques en hauteur - Partie 1: Exigences de sécurité et méthodes d'essai

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Sports and recreational facilities - Ropes courses - Part 1: Construction and safety requirements

Structures de sport et d'activités de plein air - Parcours acrobatiques - Partie 1: Construction et exigences de sécurité

Sport- und Freizeitanlagen - Seilgärten - Teil 1: Konstruktion und sicherheitstechnische Anforderungen

This European Standard was approved by CEN on 10 November 2007.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 15567-1:2007) has been prepared by Technical Committee CEN/TC 136 “Sports, playground and other recreational equipment”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2008, and conflicting national standards shall be withdrawn at the latest by June 2008.

This standard is divided into the following two parts:

Part 1: Construction and safety requirements.

Part 2: Operation requirements.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

Ropes courses vary considerably and may be used for education, recreational, training or therapeutic purposes.

Ropes course activities involve risks that should be managed by the operators. This is achieved through careful supervision, training, instruction, information etc.

Ropes course activities should only be taken by those who are physically and mentally able to comply with the safety requirements specified by the operator.

The various safety devices (for protection against falling from a height and collisions) consist of equipment designed to limit the consequences of falls or collisions. There are inherent risks associated with ropes courses. These risks should, however, be appropriately managed and minimised by the ropes course operator and his staff; it should be understood that they can not be eliminated altogether.

On the basis of a risk assessment, operators should take reasonably practicable measures to ensure the safety of participants. This means that the degree of risks in a particular job/work place/facility need to be balanced against the time, trouble, cost, benefits and physical difficulty of taking measures to avoid or reduce the risk.

Ropes course operators should also consider EN 15567-2, when carrying out risk assessments.

1 Scope

This European Standard applies to permanent and mobile ropes courses and their components.

This Part 1 of this standard specifies safety requirements for the design, construction, inspection and maintenance of ropes courses and their components.

This Part 1 of this standard does not apply to temporary ropes courses (see 3.3) and children's play grounds (see EN 1176 all parts).

For the use of ropes courses part 2 applies.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 335-2, *Durability of wood and wood-based products — Definition of use classes — Part 2: Application to solid wood*

EN 350-2:1994, *Durability of wood and wood-based products — Natural durability of solid wood — Part 2: Guide to the natural durability and treatability of selected wood species of importance in Europe*

EN 351-1:2007, *Durability of wood and wood-based products — Preservative-treated solid wood — Part 1: Classification of preservative penetration and retention*

EN 636, *Plywood – Specifications*

EN 13411-1, *Terminations for steel wire ropes — Safety — Part 1: Thimbles for steel wire rope slings*

EN 13411-2, *Terminations for steel wire ropes — Safety — Part 2: Splicing of eyes for wire rope slings*

EN 13411-3, *Terminations for steel wire ropes — Safety — Part 3: Ferrules and ferrule-securing*

EN 13411-4, *Terminations for steel wire ropes — Safety — Part 4: Metal and resin socketing*

EN 13411-5, *Terminations for steel wire ropes — Safety — Part 5: U-bolt wire rope grips*

EN 13411-6, *Terminations for steel wire ropes — Safety — Part 6: Asymmetric wedge socket*

EN 13411-7, *Terminations for steel wire ropes - Safety - Part 7: Symmetric wedge socket*

EN 15567-2, *Sports and recreational facilities - Ropes courses - Part 2: Operation requirements*

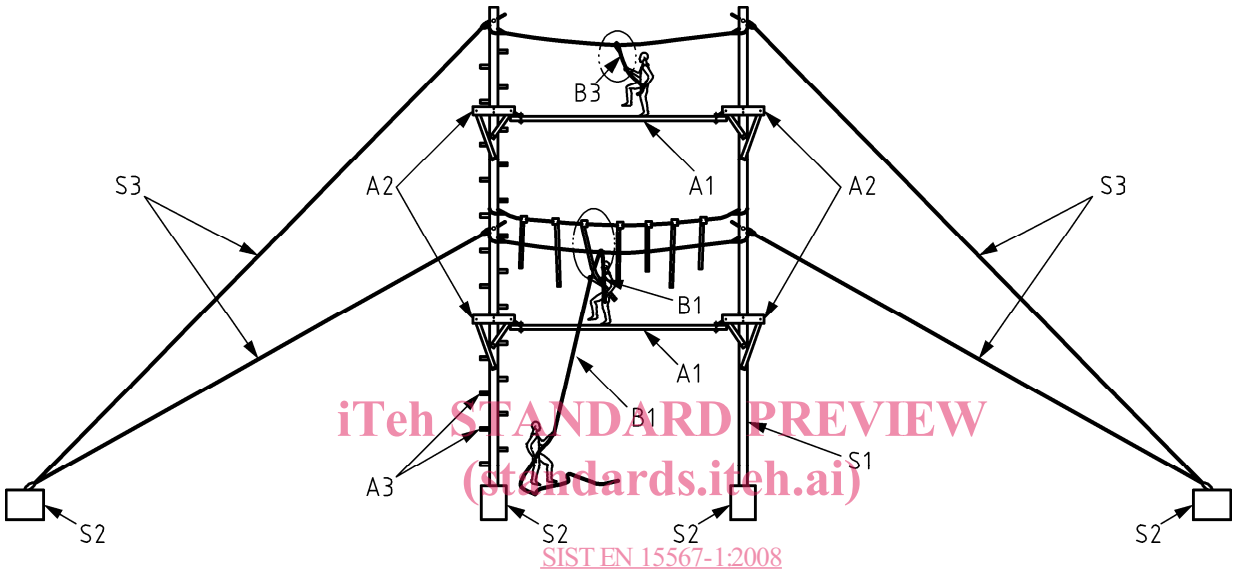
EN ISO/IEC 17020:2004, *General criteria for the operation of various types of bodies performing inspection (ISO/IEC 17020:1998)*

ISO 4309:2004, *Cranes - Wire ropes - Care, maintenance, installation, examination and discard*

3 Terms and definitions

For the purposes of this European Standard the following terms and definitions shall apply.

3.1
ropes course
constructed facility consisting of one or more activity systems, support systems and, if needed, belay and/or safety systems, see Figure 1. A ropes course is distinct from playground equipment in that it has restricted access and requires supervision



Key

Activity systems A		Support systems S		Belaying systems B	
A1	Elements	S1	Poles living trees buildings, rock, other supporting structures	B1	Assisted belaying system
A2	Platforms	S2	Foundations, anchors	B3	Self-belaying system
A3	Access	S3	Guy lines		

Figure 1 — Example of a ropes course

3.2
permanent ropes course
facility installed for more than one week on the same site

3.3
temporary ropes course
facility that has been installed for up to one week

3.4
mobile ropes course
facility that is transportable

3.5
zip wire
activity system in which the participant glides under gravity in a sloping direction

3.6
giant swing
activity system where the participant performs guided pendulum (to- and-fro) movements

3.7
activity system
facility that permits the progression of the participant

EXAMPLE Examples are elements, platforms and access.

NOTE see Figure 1 and Figure 2 for examples.

3.8
support system
artificial and/or natural structure intended for installation of activity and safety systems

NOTE See Figure 1 and Figure 2 for examples.

3.9
self-belaying system
belaying system that is operated by the participant him-/herself

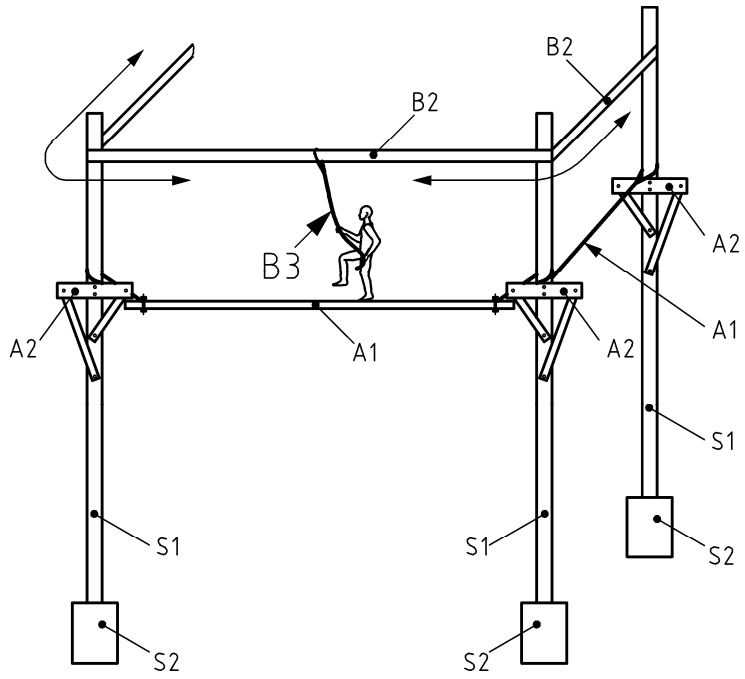
NOTE See Figure 1.

3.10
assisted belaying system
belaying system where the participant is secured by at least one person

NOTE See Figure 1.

3.11
continuous belaying system
belaying system that enables participants to progress from one activity system to the next and that does not require participants to undo or change the connection to the belaying system

NOTE See Figure 2.



Key

Activity systems A		Support systems S		Belaying systems B	
A1	Elements	S1	Poles living trees buildings, rock, other supporting structures	B2	Continuous belaying system
A2	Platforms			B3	Self-belaying system
		S2	Foundations, anchors		

Figure 2 - Example of a continuous belaying system

3.12
change-over
manual transfer from one part of a safety system to another

3.13
landing area
area in which a participant exiting an element can land

3.14
inspection body
body that performs inspection

NOTE 1 A body can be an organization or part of an organization.

[EN ISO/IEC 17020:2004]

NOTE 2 EN ISO/IEC 17020 defines inspection bodies of type A, type B and type C, covered by appropriate professional civil liability insurance.

3.15
falling space
any space into which a participant may enter during a fall stopped by the belaying system

3.16
free space
space in, on or around an element that can accommodate a participant carried along passively by the equipment

EXAMPLE Examples are oscillating space for a Tyrolean traverse, for a zip wire or for a giant swing.

3.17
arboricultural expert
competent person able to undertake arboreal assessments. They shall be covered by appropriate professional civil liability insurance

3.18
maximum fall height
maximum height that a participant can fall

3.19
safety line
flexible or rigid, horizontal, vertical or sloping, continuous or discontinuous device used as a protection against falling from a height

3.20
platform
flat, practically horizontal raised area in which participants can temporarily stay, before or after the element

3.21
safety system
system used either to arrest or cushion a participant's fall

NOTE Fall prevention systems may consist of a guard rail, safety line, landing mat, net, retractable lifeline, etc.

3.22
active braking system
system operated by the participant or another person

3.23
passive braking system
system operating automatically

EXAMPLE Examples are bungee, gravity, net, water.

3.24
tyrolean traverse
ropes (essentially horizontal) on which participants progress under their own power

3.25
routine visual check
inspection intended to identify obvious hazards that can result from vandalism, use or weather conditions

3.26
operational inspection
inspection, more detailed than routine visual inspection, to check the operation and stability of the equipment

3.27
periodical inspection
verification, at intervals not exceeding 12 months intended to establish the overall level of safety of equipment, foundations and surfaces

3.28
critical application
application where the consequences of a failure are likely to lead a serious incident or accident

3.29
spotting
one or more persons working to catch, hold or give physical support to other participants

3.30
dead load
weight of the element when unloaded

3.31
imposed load
load corresponding to average weight of a participant multiplied by the number of participants simultaneously authorised on the element (to be updated)

3.32
dynamic load
load generated by a falling participant

3.33
element
activity unit in a ropes course, usually between two platforms

3.34
level 1 supervision
situation whereby an instructor can physically intervene

3.35
level 2 supervision
situation whereby an instructor can clearly see the participant and intervene verbally

4 Safety requirements

4.1 Choice of site

NOTE In general, the installation and use of ropes courses will cause changes to the environment which are covered by national legislation currently in force.

The site of the ropes course shall be chosen to ensure that it is located in an area of reasonable operating safety. It shall be possible to evacuate participants from any part of the ropes course.

The immediate surrounding area shall not impair the safety of the structure and the activities taking place on the site.

Local factors (e.g. lightening, humidity, corrosion, flooding, avalanches etc.) shall be taken into consideration in both the design and the operation of the facility, see EN 15567-2.

Unauthorized access to the ropes course shall be taken into account referring to national regulations.

4.2 Material

4.2.1 General

Materials shall conform to **4.2.2** through **4.2.5.**