

**Ohutusnõuded inimeste  
transportimiseks mõeldud  
kõistepaigaldistele. Üldnõuded. Osa 1:  
Nõuded kõikidele paigaldistele**

Safety requirements for cableway installations  
designed to carry persons - General requirements -  
Part 1: Requirements for all installations

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12929-1:2004 sisaldab Euroopa standardi EN 12929-1:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 21.12.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12929-1:2004 consists of the English text of the European standard EN 12929-1:2004.</p> <p>This document is endorsed on 21.12.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This part of EN 12929 specifies the safety requirements for general requirements for cableway installations designed to carry persons. These requirements should be applied to the various types of installations and their environment.</p>	<p><b>Scope:</b></p> <p>This part of EN 12929 specifies the safety requirements for general requirements for cableway installations designed to carry persons. These requirements should be applied to the various types of installations and their environment.</p>
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**Võtmesõnad:**

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English version

**Safety requirements for cableway installations designed to carry  
persons - General requirements - Part 1: Requirements for all  
installations**

Prescriptions de sécurité pour les installations à câbles  
transportant des personnes - Dispositions générales -  
Partie 1 : Prescriptions applicables à toutes les installations

Sicherheitsanforderungen für Seilbahnen für den  
Personenverkehr - Allgemeine Bestimmungen - Teil 1:  
Anforderungen für alle Anlagen

This European Standard was approved by CEN on 20 August 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (EN 12929-1:2004) has been prepared by Technical Committee CEN/TC 242 "Safety requirements for passenger transportation by rope", the secretariat of which is held by AFNOR.

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 April 2005, and conflicting national standards shall be withdrawn at the latest by April 2005.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This document contains a bibliography.

EN 12929 with the generic title "*Safety requirements for cableway installations designed to carry persons - General requirements*", is in two parts:

- *Part 1: Requirements for all installations*
- *Part 2: Additional requirements for reversible bicable aerial ropeways without carrier truck brakes*

Part 1 of this document deals with general requirements applicable to all cableway installations designed to carry persons; Part 2 deals with the supplementary requirements applicable to reversible bicable aerial ropeways without carrier truck brakes.

This document forms part of the standards programme approved by the CEN Technical Board on safety requirements for cableway installations designed to carry persons:

- 1) Safety requirements for cableway installations designed to carry persons – Terminology.
- 2) Safety requirements for cableway installations designed to carry persons - General requirements.
- 3) Safety requirements for cableway installations designed to carry persons – Calculations.
- 4) Safety requirements for cableway installations designed to carry persons - Ropes.
- 5) Safety requirements for cableway installations designed to carry persons - Tensioning devices.
- 6) Safety requirements for cableway installations designed to carry persons – Drive systems and other mechanical equipment.
- 7) Safety requirements for cableway installations designed to carry persons - Carriers.
- 8) Safety requirements for cableway installations designed to carry persons - Electrical equipment other than for drive systems.
- 9) Safety requirements for cableway installations designed to carry persons - Civil engineering works.
- 10) Safety requirements for cableway installations designed to carry persons – Pre-commissioning inspection, maintenance and operational inspection and checks.

- 11) Safety requirements for cableway installations designed to carry persons – Recovery and evacuation.
- 12) Safety requirements for cableway installations designed to carry persons - Operation.
- 13) Safety requirements for cableway installations designed to carry persons - Quality assurance.

This series of standards forms a complete set with regard to the design, manufacture, construction, maintenance and operation of all cableway installations for designed to carry persons.

In respect of ski-tows, the drafting of this document has been guided by the works of the International Organisation for Transportation by Rope (OITAF).

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



## 1 General

### 1.1 Scope

This part of EN 12929 specifies the safety requirements for general requirements for cableway installations designed to carry persons. These requirements are applied to the various types of installations and their environment.

This document defines general technical characteristics and prescribes design principles and general safety requirements.

It does not deal with details of operation and maintenance, nor with calculations and detailed requirements for the manufacture of components.

This Part 1 does not deal with special requirements applicable to bicable reversible aerial ropeways without carrier truck brakes, which are the subject of Part 2.

It includes requirements relating to the prevention of accidents and the protection of workers.

It does not apply to cableways for the transportation of goods, nor to inclined lifts.

### 1.2 General principles

**1.2.1** Stringent safety requirements are of the utmost importance for the design, construction, installation, maintenance and operation of cableway installations designed to carry persons.

The design, construction, installation, maintenance and operation of cableways shall only be entrusted to contractors and experts who have the necessary knowledge and experience and who can ensure careful execution of the installation and proper management of the operation.

All the components shall be calculated exactly, be of a good mechanical and electrical design and be manufactured from adequate, defect-free materials possessing the required characteristics.

**1.2.2** All components shall be kept in working order and in good condition. Reference is also made to prEN 1709 and prEN 12397.

**1.2.3** In addition to the European Standards specific to cableway installations, the relevant European specifications shall be used for the design, construction, installation, maintenance and operation of cableways.

**1.2.4** This document takes into account, in certain cases, the careless behaviour of passengers. In all cases, use of the cableway in accordance with its intended use is assumed and not misuse of the installation.

### 1.3 Exceptions

**1.3.1** Exceptions to EN 1709, EN 1908, EN 1909, EN 12397, EN 12408, EN 12927 (Parts 1 to 8), EN 12929-2, EN 12930, EN 13107, EN 13223, EN 13243 and prEN 13796 (Parts 1 to 3) are permissible, particularly in the case of innovation, if they are justified by a safety study and offer at least the same level of safety.

**1.3.2** Exceptions to this standard are also permissible in the case of replacement of components in existing installations.

## 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 294, *Safety of machinery – Safety distance to prevent upper limbs coming into contact with danger zones.*

EN 1709, *Safety requirements for cableway installations designed to carry persons – Pre-commissioning inspection, maintenance and operational inspection and checks.*

prEN 1907:2004, *Safety requirements for cableway installations designed to carry persons – Terminology.*

EN 1908, *Safety requirements for cableway installations designed to carry persons – Tensioning devices.*

EN 1909, *Safety requirements for cableway installations designed to carry persons – Recovery and evacuation.*

EN 12397, *Safety requirements for cableway installations designed to carry persons – Operation.*

EN 12408, *Safety requirements for cableway installations designed to carry persons – Quality assurance.*

EN 12927-1, *Safety requirements for cableway installations designed to carry persons – Ropes – Part 1: Selection criteria for ropes and their end fixings.*

EN 12927-2, *Safety requirements for cableway installations designed to carry persons – Ropes – Part 2: Safety factors.*

EN 12927-3, *Safety requirements for cableway installations designed to carry persons – Ropes – Part 3: Long splicing of 6 strand hauling, carrying-hauling and towing ropes.*

EN 12927-4, *Safety requirements for cableway installations designed to carry persons – Ropes – Part 4: End fixings.*

EN 12927-5, *Safety requirements for cableway installations designed to carry persons – Ropes – Part 5: Storage, transportation, installation and tensioning.*

EN 12927-6, *Safety requirements for cableway installations designed to carry persons – Ropes – Part 6: Discard criteria.*

EN 12927-7, *Safety requirements for cableway installations designed to carry persons – Ropes – Part 7: Inspection, repair and maintenance.*

EN 12927-8, *Safety requirements for cableway installations designed to carry persons – Ropes – Part 8: Magnetic rope testing (MRT).*

EN 12929-2, *Safety requirements for cableway installations designed to carry persons – General requirements – Part 2: Additional requirements for jig back bicable aerial ropeways without carrier truck brakes.*

EN 12930, *Safety requirements for cableway installations designed to carry persons – Calculations.*

EN 13107, *Safety requirements for cableway installations designed to carry persons – Civil engineering works.*

EN 13223, *Safety requirements for cableway installations designed to carry persons – Drive systems and other mechanical equipment.*

EN 13243, *Safety requirements for cableway installations designed to carry persons – Electrical equipment other than for drive systems.*

prEN 13796-1, *Safety requirements for cableway installations designed to carry persons – Carriers – Part 1: Grips, carrier trucks, on-board brakes, cabins, chairs, carriages, maintenance carriers, tow-hangers.*

prEN 13796-2, *Safety requirements for cableway installations designed to carry persons – Carriers – Part 2: Slipping resistance tests for grips.*

prEN 13796-3, *Safety requirements for cableway installations designed to carry persons – Carriers – Part 3: Fatigue testing.*

EN ISO 12100, *Safety of machinery - Basic concepts, general principles for design.*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 1907:2004 and the following apply.

#### 3.1

##### **harm (to persons)**

physical injury and/or damage to health

#### 3.2

##### **hazard**

a potential source of harm

#### 3.3

##### **risk**

combination of the probable rate of occurrence of a hazard causing harm and of the degree of severity of the harm

#### 3.4

##### **hazardous situation**

any situation in which a person is exposed to a hazard or hazards

#### 3.5

##### **hazard scenario**

any event which directly gives rise to a hazardous situation

#### 3.6

##### **height above ground**

the distance between the surface of the floor of closed carriers or the seat surface of open carriers and the surface of the ground (without taking into account any covering of snow)

#### 3.7

##### **speed**

speed of the moving cable, measured at the drive sheave  
for self-propelled vehicles, the speed of these on the rope

#### 3.8

##### **safety component**

any basic component, set of components, subassembly or complete assembly of equipment and any device incorporated in the installation for the purpose of ensuring a safety function and identified by the safety