

Ohutusnõuded inimeste transportimiseks mõeldud köisteepaigaldistele. Köied. Osa 2: Ohutusfaktorid

Safety requirements for cableway installations
designed to carry persons - Ropes - Part 2: Safety
factors

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12927-2:2004 sisaldab Euroopa standardi EN 12927-2:2004 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 12927-2:2004 consists of the English text of the European standard EN 12927-2:2004.</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>
--	---

<p>Käsitlusala:</p> <p>This part of EN 12927 specifies the safety requirements applicable for safety factors for steel wire ropes (tensile safety factor, bending ratio and transverse force factors) for installations for passenger transportation by rope. This standard is applicable to the various types of installations and takes into account their environment.</p>	<p>Scope:</p> <p>This part of EN 12927 specifies the safety requirements applicable for safety factors for steel wire ropes (tensile safety factor, bending ratio and transverse force factors) for installations for passenger transportation by rope. This standard is applicable to the various types of installations and takes into account their environment.</p>
--	--

ICS 45.100

Võtmesõnad:

ICS 45.100

English version

Safety requirements for cableway installations designed to carry persons - Ropes - Part 2: Safety factors

Prescriptions de sécurité des installations à câbles
transportant des personnes - Câbles - Partie 2 :
Coefficients de sécurité

Sicherheitsanforderungen für Seilbahnen und
Schleppaufzüge im Personenverkehr - Seile - Teil 2:
Sicherheitsfaktoren

This European Standard was approved by CEN on 23 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.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Foreword.....	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 General requirements	6
4.1 Application of this standard	6
4.2 Safety principle	6
5 Safety requirements	7
5.1 General.....	7
5.2 Safety factors	7
5.3 Bending ratio.....	9
Annex A (informative) A-deviations	11
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2000/9/EC relating to cableway installations designed to carry persons	12

Foreword

This document (EN 12927-2:2004) 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 EN 12927 includes the following parts under the general title " Safety requirements for cableway installations designed to carry persons – Ropes" :

- *Part 1: Selection criteria for ropes and their end fixings*
- *Part 2: Safety factors*
- *Part 3: Long splicing of 6 strand hauling, carrying-hauling and towing ropes*
- *Part 4: End fixings*
- *Part 5: Storage, transportation, handling and tensioning*
- *Part 6: Discard criteria*
- *Part 7: Inspection, repair and maintenance*
- *Part 8: Magnetic rope testing (MRT).*

This European Standard forms part of the standards programme adopted by the CEN Technical Board in relation of safety requirements for passenger transportation by rope. This programme includes the following standards:

- 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*

Together these form a series of standards regarding design, manufacture, production, maintenance and operation of all installations for passenger transportation by rope. In respect of ski-tows, the drafting of this European Standard 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 United Kingdom

1 Scope

This part of EN 12927 specifies the safety requirements applicable for safety factors for steel wire ropes (tensile safety factor, bending ratio and transverse force factors) for installations for passenger transportation by rope. This standard is applicable to the various types of installations and takes into account their environment.

This part of EN 12927 does not apply to brake ropes.

Some requirements concern synthetic ropes.

The requirements relating to the protection of workers are not included in this standard.

It does not apply to ropes for installations used for the transportation of goods, nor to inclined lifts.

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 1709, *Safety requirements for cableway installations designed to carry persons - Pre-commissioning inspection, maintenance, 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 12385-2:2002, *Steel wire ropes – Safety – Part 2: Definitions, designation and classification.*

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 12927-3, *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 12929-7, *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 12929-1, *Safety requirements for passenger transportation by rope - General requirements - Part 1: Requirements applicable to all installations.*

EN 12929-2, *Safety requirements for cableway installations designed to carry persons – General requirements – Part 2: Additional requirements for reversible 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.*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 1907:2004, EN 12385-2:2002 and the following apply.

3.1

tensile safety factor (TSF)

ratio between the Minimum Breaking Force (MBF) of the rope and the calculated tension force in the rope (see EN 12930)

3.2

bending ratio (rope)

ratio between either the pitch diameter of the sheave (D) and the nominal rope diameter (d) or the pitch radius of the shoe, saddle or roller chain (R) and the nominal rope diameter

3.3

transverse force factor

ratio between the tension force in the rope and the force normal to the rope axis

4 General requirements

4.1 Application of this standard

The requirements of this document apply to all installations along with those of EN 1709, EN 1908, EN 1909, EN 12397, EN 12408, EN 12927-1, EN 12927-3, EN 12927-4, EN 12927-5, EN 12927-6, EN 12927-7, EN 12927-8, EN 12929-1, EN 12929-2, EN 12930, EN 13107, EN 13223, EN 13243, prEN 13796-1, prEN 13796-2 and prEN 13796-3.

4.2 Safety principle

4.2.1 General

The safety principles set out in EN 12929-1 apply.