

# SVENSK STANDARD

## SS-EN 13223:2015



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### **Linbaneanläggningar – Säkerhetsregler för linbaneanläggningar för persontransport – Drivsystem och annan mekanisk utrustning**

### **Safety requirements for cableway installations designed to carry persons – Drive systems and other mechanical equipment**



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Denna standard ersätter SS-EN 13223:2004, utgåva 1.

The European Standard EN 13223:2015 has the status of a Swedish Standard. This document contains the official English version of EN 13223:2015.

This standard supersedes the Swedish Standard SS-EN 13223:2004, edition 1.

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EUROPEAN STANDARD

**EN 13223**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2015

ICS 45.100

Supersedes EN 13223:2004

English Version

## Safety requirements for cableway installations designed to carry persons - Drive systems and other mechanical equipment

Prescriptions de sécurité pour les installations à câbles transportant des personnes - Entraînements et autres dispositifs mécaniques

Sicherheitsanforderungen an Seilbahnen für den Personenverkehr - Antriebe und weitere mechanische Einrichtungen

This European Standard was approved by CEN on 18 November 2014.

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 CEN-CENELEC Management Centre or to any CEN member.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## Foreword

This document (EN 13223:2015) 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of an identical text or by endorsement, at the latest by January 2016, and any conflicting national standards shall be withdrawn at the latest by January 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be responsible for identifying any or all such patent rights.

This document supersedes EN 13223:2004.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports the essential requirements of EU Directive 2000/9/EG.

For the relationship with EU Directive 2000/9/EG, see informative Annex ZA, which is an integral part of this document.

With respect to EN 13223:2004, the following significant amendments have been made:

- In Clause 1, an addition about employee protection has been added.
- In Clause 3, terms and conditions have been removed.
- In 4.2.2, clauses l) and p) have been defined more precisely.
- In 6.2.6, the requirement for the interruption of the power flow to the main drive motor has been amended.
- In 6.3.1, the requirement for the speed of the auxiliary drive has been removed.
- In 6.8.4, it has been defined more precisely that only the safety components must be calculated with the mentioned safety factors.
- 6.9.2.3 has been expanded.
- In 7.3.1, the requirement has been narrowed in terms of the need for monitoring the types of control systems.
- In 8.2.2, the allowable difference in the speed value has been defined with 10 % of the nominal speed.
- In 8.3.2, the response effect of the 10 % overspeed trigger has been defined more precisely.
- In 8.3.3, the response effect of the 20 % overspeed trigger has been defined more precisely.
- In 8.4.2, the reference to Appendix A has been removed.
- 8.4.3 has been rewritten to uniformly define the safety requirement for braking systems.
- In 8.6.7, the requirement for sufficient static friction has been added.
- In 8.6.9, the monitoring requirement has been extended to all DC motors.

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- 9.1.1 has been expanded.
- In 9.1.2, the requirement for the minimum delay has been redefined.
- 9.1.3 has been clarified.
- 9.3.1 has been clarified.
- In 9.3.6, the requirement of 20 % overspeed trigger has been removed.
- In 9.4, the reference standards for pneumatic systems have been added.
- 10.3.4 has been defined more precisely.
- 11.7.2 has been defined more precisely.
- 11.8.7 has been defined more precisely.
- In 11.9.1, the reference to the appendices has been removed.
- In 12.1.3, content has been revised. The safety factor for calculating fatigue has been defined.
- In 12.2.6, the requirement has been extended to all sheaves.
- In 12.2.8, the response effect of the monitoring has been defined more precisely. The requirement for evacuation ropes has been defined.
- 13.1.2 has been redrafted. The slip resistance has been defined.
- In 14.2 the requirement for evacuation ropes has been defined.
- 14.3 has been redrafted.
- 15.1.2 has been defined more precisely.
- In 17.1.1.4, the requirement was removed that the devices must be located in the stations.
- 17.8.3 has been defined more precisely.
- 17.9 has been clarified.
- In 18.1.1.2, the exceptions have been expanded to the station area of all types of systems.
- In 18.1.1.3, the exceptions have been expanded to the station area of aerial ropeways.
- In 18.1.1.4, the requirement for new and unformed linings has been applied.
- In 18.1.3.5, the option of using an appropriate safety device has been introduced.
- In 18.2.3, the requirement has been expanded to the entire track rope shoe.
- In 18.2.8, the option has been introduced to not require rope catching devices on the track rope shoes.
- 18.2.10 has been clarified.
- In 18.3.2 the requirement has been removed, because the reference to EN 12929-1 is sufficient.
- 20.3.2 has been redrafted.

- Annex A has been changed to “Informative”. The content of Table A. 1 has been revised.
- Annex B has been changed to “Informative”. The content of Table B. 1 has been revised.
- Annex ZA has been revised.

This European Standard is part of a series of standards on safety requirements for cableway installations designed for passenger transport. This series consists of the following standards:

- EN 1907, relating to *Terminology*
- EN 12929 (all parts), relating to *General requirements*
- EN 12930, relating to *Calculations*
- EN 12927 (all parts), relating to *Cables*
- EN 1908, relating to *Tensioning devices*
- EN 13223, relating to *Drive systems and other mechanical equipment*
- EN 13796 (all parts), relating to *Carriers*
- EN 13243, relating to *Electrical equipment other than for drive systems*
- EN 13107, relating to *Civil engineering works*
- EN 1709, relating to *Pre-commissioning inspection, maintenance, operational inspections and checks*
- EN 1909, relating to *Recovery and evacuation*
- EN 12397, relating to *Operation*
- EN 12408, relating to *Quality control*

Together these form a series of standards applicable to the design, manufacture, installation, maintenance and operation of all cableway installations designed for passenger transport.

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).

In accordance with CEN-CENELEC Internal Regulations, the national standards institutes of the countries listed below are required to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, FYR Macedonia, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.