OHUTUSNÕUDED INIMESTE TRANSPORTIMISEKS MÕELDUD KÖISTEEPAIGALDISTELE. ELEKTRISEADMED, V.A AJAMISÜSTEEMIDELE

Safety requirements for cableway installations designed to carry persons - Electrical equipment other than for drive systems

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13243:2015 sisaldab Euroopa standardi EN 13243:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 13243:2015 consists of the English text of the European standard EN 13243:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 28.01.2015.	Date of Availability of the European standard is 28.01.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 45.100

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13243

January 2015

ICS 45.100

Supersedes EN 13243:2004

English Version

Safety requirements for cableway installations designed to carry persons - Electrical equipment other than for drive systems

Prescriptions de sécurité pour les installations à câbles transportant des personnes - Dispositifs électriques autres que les entraînements

Sicherheitsanforderungen an Seilbahnen für den Personenverkehr - Elektrische Einrichtungen, ohne Antriebe

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

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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

Ref. No. EN 13243:2015 E

Contents

Foreword

This document (EN 13243:2015) 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 July 2015, and any conflicting National Standards shall be withdrawn at the latest by July 2015.

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 held responsible for identifying any or all such patent rights.

This document supersedes EN 13243:2004.

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 2000/9/EC.

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

With respect to EN 13243:2004, the following significant amendments have been made:

– In section 1, additions have been added with respect to worker protection and the transported persons.

– In section 1, the reference to relevant publications, e.g. EN 61508 (all parts) has been added for complex electronics and embedded software.

– In section 3, terms and definitions have been removed because the reference to EN 1907 is sufficient.

– In 4.1.3, the process to determine the requirements for electrical equipment has been added by means of a schematic representation of the process for risk reduction.

– In 4.2.2, the risk categories have been revised with regard to the current principles.

– The content and structure of 4.2.3 have been adjusted to the new reference system of the EN ISO 13849-1 standard due to the withdrawal of EN 954 1 by the end of 2011. The requirements of the requirement classes have been revised accordingly.

– In 4.2.3.14, Table 1 has been added on the basis of EN ISO 13849 1.

– In 4.2.3.15, Table 2 has been added on the basis of EN ISO 13849 1.

– In 4.3, the requirements for safety-related application software have been added with the presentation of the development process of the software (V diagram).

– In 6.4, reference has been made to the reference standard EN ISO 13850, with respect to the requirements of emergency stop devices.

– In 8.2.2, the requirement for test devices has been defined more precisely.

– In Annex A, the definitions of the risk categories have been updated and parameters P1 and P2 have been added with respect to the possibility of avoiding hazardous situations.

– In Annex B, the assignment of performance levels as specified in EN ISO 13849 1 and the safety integrity level (SIL) as specified in EN 61508 (all parts) to requirement classes is shown in a table.

– In the old Annex C, the examples for assigning the requirement classes have been removed.

- In Annex C, the table for indicating devices has been updated.
- In the old Annex D, Deviation A of Italy has been removed.
- In Annex D, the table with examples of the level of fault detection (FG) has been added.
- Old Annex ZA has been updated.
- The bibliography has been updated.

This document forms part of the standards programme approved by the CEN/TC 242 . This programme includes the following standards:

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

This series of standards forms a complete set with regard to the design, production, erection, maintenance and operation of any cableway installation designed to carry persons.

In respect of ski-tows, the drafting of this 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 organisations of the following countries are bound to implement this European Standard: Belgium, Bulgaria, Denmark, Germany, the former Yugoslav Republic of Macedonia, Estonia, Finland, France, Greece, Ireland, Iceland, Italy, Croatia, Latvia, Lithuania, Luxemburg, Malta, the Netherlands, Norway, Austria, Poland, Portugal, Romania, Sweden, Switzerland, Slovakia, Slovenia, Spain, Czech Republic, Turkey, Hungary, United Kingdom and Cyprus.

1 Scope

This European standard specifies safety requirements for electrical devices (including application software, apart for those in drive systems) on cableway installations designed to carry persons. This standard is applicable to the various types of cableway installations and takes into account their environment. It does not apply to complex electronics and embedded software.

For complex electronics and embedded software, reference is made to the relevant publications e.g. EN 61508 (all parts).

Electromagnetic compatibility (EMC) is not covered in this standard; cableways and their components should comply with general requirements for EMC.

For electrical devices which are part of drive systems, the requirements of those sections listed in the scope of EN 13223 as relating to drive systems should be observed.

This standard contains requirements for the prevention of accidents and protection of workers without prejudice to the application of national regulations. National regulations of a legal nature in regards to building or regulations or that are designed to protect particular groups of people, remain unaffected.

It does not apply to cableway installations for the transportation of goods by rope or to lifts.

2 Normative references

The following references, in whole or in part, are normatively referenced in this standard and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the reference document (including any amendments) applies.

EN 1709, *Safety requirements for cableway installations designed to carry persons — Precommissioning inspection, maintenance, operational inspection and checks*

EN 1907, *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 control*

EN 12927 (all parts), *Safety requirements for cableway installations designed to carry persons — Ropes*

EN 12929 (all parts), *Safety requirements for cableway installations designed to carry persons — General requirements*

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 13796 (all parts), *Safety requirements for cableway installations designed to carry persons — Carriers*

EN 50110 (all parts), *Operation of electrical installations*

EN 50272-2, *Safety requirements for secondary batteries and battery installations – Part 2: Stationary batteries*

EN 60204-1, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1)*

EN 62305 (all parts), *Protection against lightning (IEC 62305, all parts)*

EN ISO 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100)*

EN ISO 13849-2, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation (ISO 13849-2)*

EN ISO 13850, *Safety of machinery — Emergency stop — Principles for design (ISO 13850)*

3 Terms and definitions

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

3.1 Basic principles, general

3.1.1
safety function
all the procedures that identify the occurrence of certain conditions or operations that together make up a hazardous situation.

Note 1 to entry: These procedures initiate processes that reduce the risks involved particularly by stopping the installation. A safety function starts with an assessment of the conditions and physical parameters (input unit) in the cableway and ends with the initiation of the process (output unit) or completion of the procedure initiated.

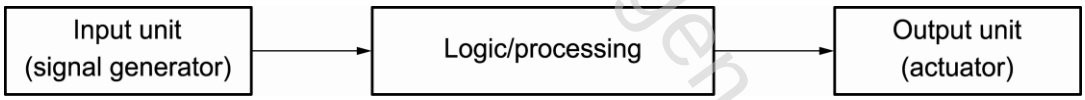

Figure 1 – Schematic representation of a safety function

3.1.2
electrical safety device
all the components used to implement all the operations of a safety function.

Note 1 to entry: Electrical safety devices may be of Type A or Type B (see 4.2.3.1)

3.1.3
remote monitoring installation
signalling installation
installation used to transmit commands and information between the cableway stations or between stations and carriers