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English Version

**Safety recommendations for cableway installations designed to
carry persons - Prevention and fight against fire - Part 2: Other
funicular railways and other installations**

Recommandations de sécurité pour les installations à
câbles transportant des personnes - Prévention et lutte
contre les incendies - Partie 2 : Autres funiculaires et
autres installations

Sicherheitsempfehlungen für Seilbahnen für den
Personenverkehr - Brandverhütung und -bekämpfung - Teil
2: Andere Standseil- und Seilbahnen

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Contents

Page

Foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 General recommendations	8
4.1 Application of this technical report	8
4.2 Safety principles	8
4.2.1 General	8
4.2.2 Hazard scenarios	8
4.2.3 Safety measures	8
5 Basic recommendations	9
6 Recommendations concerning fire prevention and firefighting in carriers	10
6.1 Materials	10
6.2 Electrical cabinets	10
6.3 Cabling outside the electrical cabinets and lighting	11
6.4 Batteries	11
6.5 Battery chargers	11
6.6 Video equipment (camera, monitor)	11
6.7 Heating, air conditioning	11
6.8 Electrical components outside cabinets which are energized during travel (dynamos, alternators, motors)	11
6.9 Pantographs	12
6.10 Rail brake – Retarder	12
6.11 Hydraulic power plants and circuits – Pressure vessels – Refrigerants	12
6.12 Prohibition of smoking, open fires and the transportation of flammable materials	12
6.13 Extinguishers and other means of firefighting	12
6.14 Capacity of carriers	13
6.15 Recovery measures in the event of a fire on board a carrier	13
6.16 Emergency exits from carriers	13
7 Recommendations concerning fire prevention and firefighting in the area of the line	13
7.1 Rails and overhead catenaries supplying auxiliary electrical power to carriers	13
7.2 Transmission of electrical power along the track or supported by line support structures	14
7.3 Remote communication cable between carrier and control point	14
7.4 Transportation of flammable liquid along the funicular railway track	14
7.5 Track or route of line	14
8 Recommendations concerning fire prevention and firefighting in stations	15
8.1 General	15
8.2 Platform materials	15
8.3 Maintenance pit beneath carriers at the platform	16
8.4 Space adjacent to the platforms	16
8.5 Transmission of electrical power	16
8.6 Contacts for recharging the carrier batteries	16
8.7 Video equipment (camera, monitor)	16
8.8 Dispensing machines for use by passengers and other platform furniture	17
8.9 Prohibition of smoking, open fires and the transportation of flammable materials	17
8.10 Extinguishers	17

8.11	Smoke detection and clearing.....	17
9	Recommendations concerning fire prevention and firefighting in the machine room and electrical power system spaces.....	17
9.1	Prevention.....	17
9.2	Limitation of spread of fire.....	17
10	Recommendations concerning fire prevention and firefighting in electrical supply spaces.....	18
11	Recommendations concerning fire prevention and firefighting in the control room	18
11.1	Civil engineering.....	18
11.2	Spaces adjacent to the control point.....	19
11.3	Electrical equipment.....	19
11.4	Video monitors	19
11.5	Space heating	19
11.6	Domestic utensils.....	19
11.7	Furniture	19
11.8	Putting safety devices out of service.....	19
11.9	Personnel	20
12	Lightning.....	20
13	Training of personnel	20
14	Maintenance.....	20
	Bibliography	21

Foreword

This Technical Report (CEN/TR 14819-2:2005) has been prepared by Technical Committee CEN/TC 242 "Safety requirements for passenger transportation by rope", the secretariat of which is held by AFNOR.

CEN/TR 14819 comprises the following parts presented under the general title of *Safety recommendations for cableway installations designed to carry persons - Prevention and fight against fire*:

- Part 1: Funicular railways in tunnels
- Part 2: Other funicular railways and other installations

This technical report forms part of the standards programme approved by the CEN Technical Board (CEN/BT) 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

Together these form a series of standards regarding design, manufacture, construction, maintenance and operation of all cableway installations designed to carry persons.

Introduction

This draft report has been prepared by a working group set up by TC 242 "Safety requirements for passenger transportation by rope". It responds to a request by the European Commission and CEN and will be of use to operators and designers of installations other than funicular railways in tunnels covered by CEN/TR 14819-1.

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1 Scope

This part of the technical report specifies safety recommendations applicable to the prevention and fighting of fires in funicular railways not in tunnels, aerial ropeways and ski-tows that may endanger the health and safety of persons.

With regard to funicular railways, these recommendations are applicable to those not running in a tunnel and having a pathway alongside the track that does not allow passengers to exit the carrier in less than 5 min. For funicular railways where evacuation of the carrier can be completed within 5 min, the same recommendations may be applied in part according to the results of the safety analysis of the installation.

With regard to these problems of fire, it is essential to take organizational measures relating to operation, but these are not covered in this report.

Requirements for aerial ropeways operating in a tunnel may also be based on CEN/TR 14819-1.

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 1907:2005, *Safety requirements for cableway installations designed to carry persons - Terminology*

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

EN 12929-1, *Safety requirements for cableway installations designed to carry persons - General requirements - Part 1: Requirements applicable to all installations*

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

EN 13501-1, *Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests*

EN 50119, *Railway applications - Fixed installations - Electric traction overhead contact lines*

EN 50122-1, *Railway applications - Fixed installations - Part 1: Protective provisions relating to electrical safety and earthing*

EN 50122-2, *Railway applications - Fixed installations - Part 2: Protective provisions against the effects of stray currents caused by d.c. traction systems*

EN 50163, *Railway applications - Supply voltages of traction systems*

EN 50206-2, *Railway applications - Rolling stock - Pantographs: Characteristics and tests - Part 2: Pantographs for metros and light rail vehicles*

EN 50264-1, *Railway applications - Railway rolling stock cables having special fire performance - Standard wall - Part 1: General requirements*

prEN 45545-1, *Railway applications - Fire protection of railway vehicles - Part 1: General*

prEN 45545-2, *Railway applications - Fire protection of railway vehicles - Part 2: Requirements for fire behaviour of materials and components I*

prEN 45545-3, *Railway applications - Fire protection of railway vehicles - Part 3: Fire resistance requirements for fire barriers and partitions*

prEN 45545-4, *Railway applications - Fire protection of railway vehicles - Part 4: Fire safety requirements for railway rolling stock design*

prEN 45545-6, *Railway applications - Fire protection of railway vehicles - Part 6: Fire control and management systems*

prEN 45545-7, *Railway applications - Fire protection of railway vehicles - Part 7: Fire safety requirements for flammable liquid and flammable gas installations*

prEN 62305-1, *Protection against lightning - Part 1: General principles*

EN ISO 13943:2000, *Fire safety – Vocabulary (ISO 13943:2000)*

IEC 60331-11, *Tests for electric cables under fire conditions - Circuit integrity - Part 11: Apparatus - Fire alone at a flame temperature of at least 750 °C*

IEC 60331-21, *Tests for electric cables under fire conditions - Circuit integrity - Part 21: Procedures and requirements - Cables of rated voltage up to and including 0, 6/1, 0 kV*

3 Terms and definitions

For the purposes of this technical report, the terms and definitions given in EN 1907:2005, EN ISO 13943:2000 and the following apply:

3.1

fire resistance

ability of an object to maintain for a specified period the required fire stability, required fire integrity, required thermal insulation and/or any other required function specified in a standardized fire resistance test

NOTE The qualifier "fire resistant" only applies to this ability.

3.2

reaction to fire

behaviour of a material that, as a result of its own decomposition, feeds a fire to which it is exposed under specified conditions

3.3

fire stability criterion "R"

criterion determining the ability of an element or a structure to withstand specified loads and/or actions during the appropriate fire resistance test

3.4

fire barrier, flame integrity criterion "E"

criterion determining the ability of a separating element to prevent the passage of flames and hot gases

3.5

thermal insulation criterion "I", fire break

criterion determining the ability of a separating element to prevent the passage of heat during a fire resistance test

3.6

REI time, EI time

minimum time, in min, for which the criteria are met (examples REI 60, EI 30)