



**SLOVENSKI STANDARD**  
**SIST EN 45545-3:2024**

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**Železniške naprave - Požarna zaščita na železniških vozilih - 3. del: Zahteve za požarno odpornost požarnih pregrad**

Railway applications - Fire protection on railway vehicles - Part 3: Fire resistance requirements for fire barriers

Bahnanwendungen - Brandschutz in Schienenfahrzeugen - Teil 3: Feuerwiderstand von Feuerschutzabschlüssen

Applications ferroviaires - Protection contre les incendies dans les véhicules ferroviaires - Partie 3: Exigences de résistance au feu des barrières au feu

**Ta slovenski standard je istoveten z: EN 45545-3:2024**

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**ICS:**

13.220.20	Požarna zaščita	Fire protection
45.060.01	Železniška vozila na splošno	Railway rolling stock in general

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EUROPEAN STANDARD

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## Railway applications - Fire protection on railway vehicles - Part 3: Fire resistance requirements for fire barriers

Applications ferroviaires - Protection contre les incendies dans les véhicules ferroviaires - Partie 3 : Exigences de résistance au feu des barrières au feu

Bahnanwendungen - Brandschutz in Schienenfahrzeugen - Teil 3: Feuerwiderstand von Feuerschutzabschlüssen

This European Standard was approved by CEN on 22 October 2023.

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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 foreword

This document (EN 45545-3:2024) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by August 2024, and conflicting national standards shall be withdrawn at the latest by August 2024.

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

This document supersedes EN 45545-3:2013.

The main changes from EN 45545-3 are:

- Modification of the scope;
- Modification of dated references;
- Renumbering of 5.1 due to deletion of previous 5.1.1, 5.1.2, 5.1.3 and 5.1.4;
- Modification of 5.5;
- Modification of Table 1;
- Modification of 5.6.3;
- Modification of 5.6.4;
- Modification of Table 2;
- Modification of A.5;
- Modification of A.10;
- Addition of Annex B with elements of previous 5.5.2.

This series of European Standards *Railway applications — Fire protection on railway vehicles* consists of:

- Part 1: General;
- Part 2: Requirements for fire behaviour of materials and components;
- Part 3: Fire resistance requirements for fire barriers;
- Part 4: Fire safety requirements for railway rolling stock design;
- Part 5: Fire safety requirements for electrical equipment including that of trolley buses, track guided buses and magnetic levitation vehicles;
- Part 6: Fire control and management systems;
- Part 7: Fire safety requirements for flammable liquid and flammable gas installations.

**EN 45545-3:2024 (E)**

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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

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## Introduction

EN 45545-3 has been developed from existing fire safety regulations for railway vehicles from the International Union of Railways (UIC) and different European countries.

In using the operation and design categories defined in EN 45545-1, the requirements laid down in this part take into account the current operating conditions for European public rail transport.

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**EN 45545-3:2024 (E)****1 Scope**

This document specifies the fire resistance requirements and testing methods for fire barriers for railway vehicles.

The objective of the measures and requirements, specified in this document, is to protect passengers and staff in railway vehicles in the event of a developing fire on board.

Use of a Fire Containment and Control System, where permitted as an alternative to a fire barrier, is not in the scope of this document. It is not within the scope of this document to describe measures that ensure the preservation of the railway vehicles in the event of a fire.

**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1363-1:2020, *Fire resistance tests — Part 1: General requirements*

EN 1364-1:2015, *Fire resistance tests for non-loadbearing elements — Part 1: Walls*

EN 1364-2:2018, *Fire resistance tests for non-loadbearing elements — Part 2: Ceilings*

EN 1634-1:2014+A1:2018, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware — Part 1: Fire resistance test for door and shutter assemblies and openable windows*

EN 13501-2:2016, *Fire classification of construction products and building elements — Part 2: Classification using data from fire resistance tests, excluding ventilation services*

EN 45545-1:2013, *Railway applications — Fire protection on railway vehicles — Part 1: General*

EN 45545-5:2013+A1:2015, *Railway applications — Fire protection on railway vehicles — Part 5: Fire safety requirements for electrical equipment including that of trolley buses, track guided buses and magnetic levitation vehicles*

EN ISO 1182:2020, *Reaction to fire tests for products — Non-combustibility test (ISO 1182:2020)*

EN ISO 1716:2018, *Reaction to fire tests for products — Determination of the gross heat of combustion (calorific value) (ISO 1716:2018)*

EN ISO 13943:2017, *Fire safety — Vocabulary (ISO 13943:2017)*

**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 45545-1:2013 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>



## 4 Application of fire barriers

Railway vehicles shall be equipped with fire barriers at the locations specified in Table 1.

## 5 Classification, requirements and test procedures

### 5.1 General requirements

The use of the following parameters shall be in accordance with the principles described in EN 13501-2:2016 integrity criterion E, insulation criterion I and radiation criterion W.

### 5.2 Classification of fire barriers

Fire barriers shall have fire resistance properties verified by:

- a fire resistance test based on the principles of EN 1363-1:2020; or
- assessment based on fire resistance testing.

Fire barriers shall have performance based on the three parameters (E, W, I) as specified in Table 1.

NOTE For example E30, I15, means integrity is maintained for 30 min and insulation is maintained for 15 min.

### 5.3 Arc barrier Type A

Type A arc barriers in accordance with EN 45545-5:2013+A1:2015 shall satisfy the requirements for an E15 fire barrier.

### 5.4 Arc barrier Type B

Type B arc barriers in accordance with EN 45545-5:2013+A1:2015 shall satisfy the requirements for an E60 fire barrier.

### 5.5 Requirements

The requirements for fire barriers depend upon the operation categories and their location in the railway vehicle.

The fire barriers shall be located as specified in Table 1. Examples of the barriers in Table 1 are described in Annex B, in Figures B.1 to B.4.

All vertical fire barriers in the cross section of a railway vehicle shall cover the entire area between the structural floor and the structural roof. In this context, the middle floor of a double decked vehicle shall be considered as a floor for the upper deck and as a roof for the lower deck. Where a vertical barrier reaches the side wall, it shall be extended to the body shell.

Closing devices for ventilation ducts shall conform to the following requirements:

- a) where a ventilation duct passes through a fire barrier, the duct shall have a closing device where it passes through the barrier unless the complete duct meets the same level of fire resistance requirements as the barrier for:
  - its entire length;
  - its length to the next fire barrier, the next closing device, or to the exterior of the vehicle;
- b) closing devices shall meet the same fire resistance requirements as fire barriers;
- c) closing devices shall operate on reaction to a fire.

**EN 45545-3:2024 (E)**

Penetrations through fire barriers, for example for ducts or cables, shall not reduce the fire resistance of the barrier.

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