

# SVENSK STANDARD

## SS-EN 16989:2018



Fastställt/Approved: 2018-06-27  
Utgåva/Edition: 1  
Språk/Language: engelska/English  
ICS: 13.220.40;14.540;45.060.20

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### **Järnvägar – Brandskydd på järnvägsfordon – Brandförloppstest för komplett säte**

### **Railway applications – Fire protection on railway vehicles – Fire behaviour test for a complete seat**

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EUROPEAN STANDARD

**EN 16989**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2018

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ICS 13.220.40; 45.060.20

English Version

## Railway applications - Fire protection on railway vehicles - Fire behaviour test for a complete seat

Applications ferroviaires - Protection contre les incendies dans les véhicules ferroviaires - Essais de comportement au feu de siège complet

Bahnwendungen - Brandschutz in Schienenfahrzeugen - Prüfung des Brandverhaltens von kompletten Sitzen

This European Standard was approved by CEN on 19 February 2018.

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## **SS-EN 16989:2018 (E)**

### **European foreword**

This document (EN 16989:2018) 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of an identical text or by endorsement, at the latest by December 2018, and conflicting national standards shall be withdrawn at the latest by December 2018.

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 has been prepared under a mandate given to CEN/CENELEC/ETSI by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

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



## **Introduction**

This document has been developed from EN 45545-2:2013+A1:2015, Annexes A and B, and relevant European and ISO standards.

## SS-EN 16989:2018 (E)

### 1 Scope

This document sets out a test protocol to determine the burning behaviour of a rail vehicle seat design using a set of complete seats prepared and tested according to the procedures given in this document. It also sets out a standardized procedure to assess a seat's potential for vandalization.

This document describes:

- fire test method;
- test equipment specification;
- protocol for test specification procedure;
- vandalization procedure;
- calibration procedure.

### 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 13238, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

EN 13823:2010+A1:2014, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

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

EN 45545-2:2013+A1:2015, *Railway applications — Fire protection on railway vehicles — Part 2: Requirements for fire behaviour of materials and components*

EN 60584-1, *Thermocouples — Part 1: EMF specifications and tolerances (IEC 60584 1)*

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

ISO 3966, *Measurement of fluid flow in closed conduits — Velocity area method using Pitot static tubes*

ISO 5725-1, *Accuracy (trueness and precision) of measurement methods and results — Part 1: General principles and definitions*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 8421-1, *Fire protection — Vocabulary — Part 1: General terms and phenomena of fire*

ISO 9705-1, *Reaction to fire tests — Room corner test for wall and ceiling lining products — Part 1: Test method for a small room configuration*

ISO/TR 9705-2, *Reaction-to-fire tests — Full-scale room tests for surface products — Part 2: Technical background and guidance*

### 3 Terms and definitions

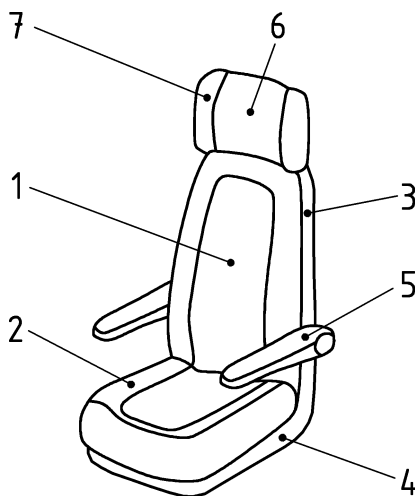
For the purposes of this document, the terms and definitions given in EN ISO 13943 and ISO 8421-1 and the following apply.

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

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

Figure 1 defines the elements that make up a typical seat.

NOTE Depending on the application, not all seats include all of the elements shown. For example, seats can be partially upholstered or without upholstery at all. Seats can also be without armrests or without headrests.



#### Key

- |   |                     |   |                         |
|---|---------------------|---|-------------------------|
| 1 | seat back (cushion) | 5 | armrest                 |
| 2 | seat base (cushion) | 6 | anti-Macassar or pillow |
| 3 | seat shell (back)   | 7 | headrest                |
| 4 | seat shell (base)   |   |                         |

Figure 1 — Definition of seat elements

#### 3.1

##### seat shell

exposed part of a seat structure

Note 1 to entry: A seat shell can be a single assembly or consist of separate base and back units.

#### 3.2

##### seat structure

part of a seat to which upholstery, armrests, headrests and any accessories are fitted as required by the seat design

#### 3.3

##### upholstery

fabrics and materials used in the covering and padding of a seat