

**Fire resistance tests for loadbearing elements - Part 2:  
Floors and roofs**

This document is a preview generated by EVS

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 1365-2:2014 sisaldab Euroopa standardi EN 1365-2:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 1365-2:2014 consists of the English text of the European standard EN 1365-2:2014.
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 11.11.2014.	Date of Availability of the European standard is 11.11.2014.
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](mailto:standardiosakond@evs.ee).

ICS 13.220.50, 91.060.20, 91.060.30

### **Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele**

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Aru 10, 10317 Tallinn, Eesti; [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

### **The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation**

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:  
Aru 10, 10317 Tallinn, Estonia; [www.evs.ee](http://www.evs.ee); phone 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## Fire resistance tests for loadbearing elements - Part 2: Floors and roofs

Essais de résistance au feu des éléments porteurs - Partie  
2: Planchers et toitures

Feuerwiderstandsprüfungen für tragende Bauteile - Teil 2:  
Decken und Dächer

This European Standard was approved by CEN on 27 September 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.

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.

CEN members are the national standards bodies of 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

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

# Contents

Page

Foreword.....	4
<b>1 Scope .....</b>	<b>5</b>
<b>2 Normative references .....</b>	<b>5</b>
<b>3 Terms, definitions, symbols and designations .....</b>	<b>5</b>
3.1 Terms and definitions .....	5
3.2 Symbols and designations .....	6
<b>4 Test equipment .....</b>	<b>7</b>
<b>5 Test conditions .....</b>	<b>7</b>
5.1 Furnace .....	7
5.2 Loading conditions .....	7
<b>6 Test specimen .....</b>	<b>7</b>
6.1 General.....	7
6.2 Size.....	8
6.3 Number .....	8
6.3.1 General.....	8
6.3.2 Pitched roof constructions without glazing.....	8
6.4 Design .....	9
6.4.1 General.....	9
6.4.2 Floor or roof construction .....	9
6.4.3 Ceiling system.....	9
6.4.4 Pitched roof constructions .....	10
6.4.5 Floor and roof constructions incorporating glazing.....	10
6.4.6 Support and restraint conditions .....	10
6.5 Construction.....	11
6.6 Verification .....	11
<b>7 Installation of test specimen .....</b>	<b>11</b>
<b>8 Conditioning.....</b>	<b>11</b>
<b>9 Application of instrumentation.....</b>	<b>11</b>
9.1 Thermocouples .....	11
9.1.1 Furnace thermocouples (plate thermometers).....	11
9.1.2 Unexposed surface thermocouples for constructions without glazing.....	12
9.2 Pressure.....	13
9.3 Deflection.....	13
9.4 Radiation.....	13
<b>10 Test procedure .....</b>	<b>13</b>
10.1 General.....	13
10.2 Application and control of load.....	13
10.3 Furnace control.....	13
10.4 Observations during the test.....	13
10.5 Termination of the test .....	13
<b>11 Performance criteria.....</b>	<b>13</b>
<b>12 Test report .....</b>	<b>13</b>
<b>13 Field of direct application of test results for constructions without glazing .....</b>	<b>14</b>

<b>Annex A (normative) Specific requirements for testing floor and roof constructions incorporating glazing .....</b>	<b>20</b>
<b>A.1 General .....</b>	<b>20</b>
<b>A.2 Test specimen design .....</b>	<b>20</b>
<b>A.3 Test specimen instrumentation .....</b>	<b>21</b>
<b>A.3.1 General .....</b>	<b>21</b>
<b>A.3.2 Average temperature rise .....</b>	<b>21</b>
<b>A.3.2.1 Uniform glazing .....</b>	<b>21</b>
<b>A.3.2.2 Non-uniform glazing.....</b>	<b>21</b>
<b>A.3.3 Maximum temperature rise.....</b>	<b>21</b>
<b>A.3.3.1 General .....</b>	<b>21</b>
<b>A.3.3.2 Sloped constructions.....</b>	<b>21</b>
<b>A.3.3.3 Horizontal constructions .....</b>	<b>22</b>
<b>A.3.4 Deflection .....</b>	<b>22</b>
<b>A.3.5 Radiation measurement.....</b>	<b>23</b>
<b>A.4 Performance criteria.....</b>	<b>23</b>
<b>A.5 Field of direct application of test results .....</b>	<b>23</b>
<b>A.5.1 General .....</b>	<b>23</b>
<b>A.5.2 Shapes of flat glass panes .....</b>	<b>23</b>
<b>A.5.3 Span length .....</b>	<b>23</b>
<b>A.5.4 Extension of width in direction perpendicular to the span.....</b>	<b>23</b>
<b>A.5.5 Inclination angle .....</b>	<b>24</b>
<b>A.5.6 Supporting constructions.....</b>	<b>24</b>
<b>A.5.6.1 General .....</b>	<b>24</b>
<b>A.5.6.2 Standard supporting constructions .....</b>	<b>24</b>
<b>A.5.6.3 Non-standard supporting construction .....</b>	<b>24</b>

## Foreword

This document (EN 1365-2:2014) has been prepared by Technical Committee CEN/TC 127 "Fire safety in buildings", the secretariat of which is held by BSI.

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 May 2015, and conflicting national standards shall be withdrawn at the latest by May 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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document supersedes EN 1365-2:1999.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard specifies a method for determining the fire resistance of:

- floor constructions, without cavities or with unventilated cavities;
- roof constructions, with or without cavities (ventilated or unventilated);
- floor and roof constructions incorporating glazing;

with fire exposure from the underside.

This European Standard is used in conjunction with EN 1363-1.

## 2 Normative references

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

EN 1363-1:2012, *Fire resistance tests - Part 1: General Requirements*

EN 1363-2, *Fire resistance tests - Part 2: Alternative and additional procedures*

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

## 3 Terms, definitions, symbols and designations

For the purposes of this document, the terms and definitions given in EN 1363-1 and EN ISO 13943 and the following apply.

### 3.1 Terms and definitions

#### 3.1.1

##### **floor construction**

a horizontal separating element of building construction which is loadbearing

#### 3.1.2

##### **roof construction**

a horizontal or sloped separating element of building construction which is loadbearing and includes the roof covering

#### 3.1.3

##### **ceiling**

a lining plus any supporting framework, including hangers, fixings and any insulation material. The ceiling may be attached directly to the structural building member or be suspended from it or be self supporting (see Figure 1)

#### 3.1.4

##### **ceiling system**

the full ceiling assembly submitted for test, including hangers and fixings, e.g. lighting and ventilation ductings and access points