Brandteknisk klassificering av byggprodukter och byggnadselement –
Del 2: Klassificering baserad på provningsdata från metoder som mäter brandmotstånd, utom för produkter för ventilationssystem

Fire classification of construction products and building elements –
Part 2: Classification using data from fire resistance tests, excluding ventilation services

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  excluding ventilation services

This European Standard was approved by CEN on 9 April 2003.

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Foreword

This document (EN 13501-2:2003) 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of an identical text or by endorsement, at the latest by February 2004, and conflicting national standards shall be withdrawn at the latest by February 2004.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 the Construction Products Directive.

CEN, CENELEC and EOTA committees preparing technical specifications which contain performance requirements against resistance to fire tests should make reference to the resistance to fire classification given in this standard and not refer directly to any specific fire test method.

Some of the methods referred to by this standard are prENs which are still undergoing technical development. Users of this standard should, therefore, check the availability and acceptability of these prENs before seeking to apply them. Currently EN 13501-2 cannot be applied to classify curtain walling for resistance to fire. This will be possible once either EN 1364-3 "Fire resistance tests for non-loadbearing elements – Part 3: Curtain walling – Full configuration (complete assembly)" is made available or alternative provisions for classifying curtain walling for resistance to fire are made available.

EN 13501 consists of the following parts:

Part 1:  Classification using test data from reaction to fire tests

Part 2:  Classification using data from fire resistance tests, excluding ventilation services

Part 3:  Classification using data from fire resistance tests on components of normal building service installations

Part 4:  Classification using test data from fire resistance tests on smoke control systems

Part 5:  Classification using test data from external fire exposure to roof tests

Annexes A and B are normative.

This document includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.
Introduction

The aim of this Part of this European Standard is to define a harmonised procedure for the classification for resistance to fire of construction products and elements. This classification is based on the test procedures listed in clause 2.


The Interpretative Document and the Commission Decision of 2 May 2000 specify performance and classes regarding fire resistance. These classes are identified by designation letters, each of which refers to an important characteristic of fire resistance behaviour.

This Part of this European Standard provides for a common understanding for these requirements. It interprets the functional requirements for the different groups of building elements and explains the method for deriving their classification on the basis of test results for individual elements.
1 Scope

This Part of this European Standard specifies the procedure for classification of construction products and building elements using data from fire resistance and smoke leakage tests which are within the direct field of application of the relevant test method. This part of this European Standard currently cannot be applied to classify curtain walling for resistance to fire. Classification on the basis of extended application is outside the scope of this standard. For extended application, however, the same classes are used as specified in this standard.

This standard deals with:

a) Loadbearing elements without a fire separating function
   - walls
   - floors
   - roofs
   - beams
   - columns
   - balconies
   - walkways
   - stairs

b) Loadbearing elements with a fire separating function, with or without glazing, services and fixtures
   - walls
   - floors
   - roofs
   - raised floors

c) Products and systems for protecting elements or parts of the works
   - ceilings with no independent fire resistance
   - fire protective coatings, claddings and screens

d) Non-loadbearing elements or parts of works, with or without glazing, services and fixtures
   - partitions
   - facades (curtain walls) and external walls
   - ceilings with independent fire resistance
   - fire doors and shutters and their closing devices
   - smoke control doors
   - conveyor systems and their closures
   - penetration seals
   - linear joint seals
   - service ducts and shafts
   - chimneys

e) Wall and ceiling coverings with fire protection ability

f) Lift landing doors which are tested to prEN 81-8 are excluded from this standard. Lift landing doors which are tested to EN 1634-1 are classified in accordance with 7.5.5.

Relevant test methods which have been prepared for these elements are listed in clause 2.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed below. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard.
only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

prEN 81-8, Safety rules for the construction and installation of lifts — Part 8: Lift landing doors – Fire resistance testing.

EN 1363-1, Fire resistance tests — Part 1: General requirements.

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

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

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

EN 1365-1, Fire resistance tests for loadbearing elements — Part 1: Walls.

EN 1365-2, Fire resistance tests for loadbearing elements — Part 2: Floors and roofs.

EN 1365-3, Fire resistance tests for loadbearing elements — Part 3: Beams.

EN 1365-4, Fire resistance tests for loadbearing elements — Part 4: Columns.

prEN 1365-5, Fire resistance tests for loadbearing elements — Part 5: Balconies and walkways.

prEN 1365-6, Fire resistance tests for loadbearing elements — Part 6: Stairs.

prEN 1366-3, Fire resistance tests for service installations — Part 3: Penetration seals.

prEN 1366-4, Fire resistance tests for service installations — Part 4: Linear joint seals.

prEN 1366-5, Fire resistance tests for service installations — Part 5: Service ducts and shafts.

prEN 1366-6, Fire resistance tests for service installations — Part 6: Raised access floors and hollow floors.

prEN 1366-7, Fire resistance tests for service installations — Part 7: Conveyor systems and their closures.

EN 1634-1, Fire resistance tests for door and shutter assemblies — Part 1: Fire doors and shutters.

EN 1634-3, Fire resistance tests for door and shutter assemblies — Part 3: Smoke control doors and shutters.

prEN 13216-1, Chimneys – Test methods for system chimneys – Part 1: General test methods.

ENV 13381-2, Test methods for determining the contribution to the fire resistance of structural members - Part 2: Vertical protective membranes.

ENV 13381-3, Test methods for determining the contribution to the fire resistance of structural members - Part 3: Applied protection to concrete members.

ENV 13381-4, Test methods for determining the contribution to the fire resistance of structural members - Part 4: Applied protection to steel members.

ENV 13381-5, Test methods for determining the contribution to the fire resistance of structural members - Part 5: Applied protection to concrete/profiled sheet steel composite members.

ENV 13381-6, Test methods for determining the contribution to the fire resistance of structural members - Part 6: Applied protection to concrete filled hollow steel columns.

ENV 13381-7, Test methods for determining the contribution to the fire resistance of structural members - Part 7: Applied protection to timber members.
3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN ISO 13943, together with the following, apply.

3.1 element of building construction
defined construction component, e.g. wall, partition, floor, roof, beam or column (EN 1363-1). An element, for the purpose of this standard, covers both individual products and elements made up of one or more products

3.2 ceiling
non-loadbearing element of a building construction designed to provide horizontal fire separation (EN 1364-2)

3.3 self-supporting ceiling
ceiling with a span from wall to wall, without any additional suspension devices (EN 1364-2)

3.4 door or shutter assembly (doorset)
complete assembly, including any frame or guide, door leaf or leaves, rolling or folding curtain, etc., which is provided for closing of permanent openings in separating elements. This includes all side-panels, vision panels or transom panels, together with the door hardware and any seals (whether provided for the purpose of fire or smoke control or for other purposes such as draught control or acoustics) which are used in the assembly (EN 1634-1)

3.5 floor
horizontal element of building construction which is loadbearing (EN 1365-2)

3.6 roof
horizontal or sloped element of building construction which is loadbearing (EN 1365-2)

3.7 suspended ceiling
ceiling which is suspended from a supporting construction (EN 1364-2)

3.8 loadbearing wall
wall designed to support an applied load (EN 1365-1)

3.9 non-loadbearing wall
wall designed not to be subjected to any load other than its self weight (EN 1364-1)

3.10 internal wall
wall which provides fire separation. It can be exposed separately to a fire from either side (EN 1364-1 and EN 1365-1)
3.11 **external wall**
wall forming the external envelope of a building which may be exposed separately to an internal or an external fire (EN 1364-1 and EN 1365-1)

3.12 **insulated wall**
wall, with or without glazing, which satisfies both the integrity and insulation criteria for the achieved fire resistance period (EN 1364-1 and EN 1365-1)

3.13 **uninsulated wall**
wall, with or without glazing, which satisfies the integrity and, where required, the radiation criteria for the achieved fire resistance period but which is not intended to provide insulation. Such a wall can consist entirely of uninsulated fire resistant glazing (EN 1364-1 and EN 1365-1)

3.14 **separating wall**
wall with or without glazing provided within a building or between adjoining buildings to prevent the transfer of fire from one side to the other (EN 1364-1 and EN 1365-1)

3.15 **curtain wall**
external non-loadbearing wall which is independent of the structural frame and supported in place in front of loadbearing structures. A curtain wall typically includes panels, glazing, seals, fixings, transoms and mullions

3.16 **fire resistant glazing**
glazing system consisting of one or more transparent or translucent panes with a suitable method of mounting, with e.g. frames, seals and fixing materials, capable of satisfying the appropriate fire resistance criteria (EN 1364-1)

3.17 **insulated glazing**
fire resistant glazing which satisfies both the integrity and insulation criteria for the achieved fire resistance period (EN 1364-1)

3.18 **uninsulated glazing**
fire resistance glazing which satisfies the integrity and, where required, the radiation criteria for the achieved fire resistance period but which is not intended to provide insulation (EN 1364-1)

3.19 **glazed element**
building element with one or more (light transmissive) panes, fire resistant or not, that are built in a frame with fixings and seals (EN 1364-1)

3.20 **test specimen**
element (or part) of building construction provided for the purpose of determining either its fire resistance or its contribution to the fire resistance of another building element (EN 1363-1)

3.21 **loadbearing element**
element that is intended for use in supporting an external load in a building and maintaining this support in the event of a fire (EN 1363-1)

3.22 **separating element**
element that is intended for use in maintaining separation between two adjacent areas of a building in the event of a fire (EN 1363-1)