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Fire resistance tests for service installations - Part 6: Raised access and hollow core floors

Feuerwiderstandsprüfungen für Installationen - Teil 6: Doppel- und Hohlböden

Sécurité contre l'incendie - Essais de résistance au feu des installations de service - Partie 6 : Planchers surélevés et planchers creux

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This European Standard was approved by CEN on 9 July 2004.

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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 Central Secretariat has the same status as the official versions.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 1366-6:2004) 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of an identical text or by endorsement, at the latest by May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

This European Standard has been prepared under a Mandate given to CEN by the European and the European Free Trade Association, and supports essential requirements of the Construction Products Directive.

EN 1366 ‘*Fire resistance tests for service installations*’ consists of the following:

Part 1: Ducts,

Part 2: Fire dampers,

Part 3: Penetration seals,

Part 4: Linear joint seals,

Part 5: Service ducts and shafts,

Part 6: Raised access and hollow core floors,

Part 7: Conveyor systems and their closures,

Part 8: Smoke extraction ducts ,

Part 9: Single compartment smoke extraction ducts ,

Part 10: Smoke control dampers,

Part 11: Fire protective systems for essential services .

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

Introduction

In this standard a representative sample of a raised or hollow floor is exposed to a specified regime of heating and loading. The performance of the test specimen is monitored on the basis of criteria described in EN 1363-1. The fire resistance of the tested construction is expressed as the time for which the appropriate criteria have been satisfied.

Caution

The attention of all persons concerned with managing and carrying out this fire resistance test, EN 1366-6, is drawn to the fact that fire testing can be hazardous and that there is a possibility that toxic and/or harmful smoke and gases can be evolved during the test. Mechanical and operation hazards can also arise during the construction of the test elements or structures, their testing and disposal of test residues.

An assessment of all potential hazards and risks to health should be made and safety precautions should be identified and provided. Written safety instructions should be issued. Appropriate training should be given to relevant personnel. Laboratory personnel should ensure that they follow written safety instructions at all times.

1 Scope

This Part of EN 1366 specifies a method for determining the fire resistance of raised access floors and hollow floors when subjected to a fire from within the plenum beneath the floor. The fire exposure applied to the test specimen may be either:

a) standard time temperature curve;

b) 'reduced' time temperature curve which follows the standard time/temperature curve only up to 500 °C. After this temperature has been reached the temperature within the furnace is maintained at 500 °C.

This document does not determine the fire resistance of the sub-floor on which the raised or hollow floor is constructed; this is given in EN 1365-2.

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 1363-1:1999, *Fire resistance tests — Part 1: General requirements.*

EN 12825:2001, *Raised access floors.*

EN 13213:2001, *Hollow floors.*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1363-1:1999, EN 12825:2001, EN 13213:2001 and EN ISO 13943:2000 and the following apply.

3.1
raised access floor
factory made flooring system comprising panels supported on an under-structure of pedestals and/or stringers or other components as applicable, providing a load bearing structure for the fitting out of a building (EN 12825)

NOTE The under-structure is part of the raised access floor.

3.2
stringer
horizontal component connecting pedestals that may support a panel

3.3
hollow floor
loadbearing layer supported by a special understructure (which may include pedestals) in order to provide a space between the loadbearing layer and the base floor for installation of e.g. telecommunication services, electrical supplies, heating or air conditioning

3.4
sub-floor
horizontal element of building construction which is loadbearing and separating (constructional floor)

3.5
panel
loadbearing horizontal component of the access floor. It is supported by the under structure (e.g. pedestals and stringers) (EN 12825)

3.6
pedestal
vertical component or part of the element which transmits loading to the sub-floor (EN 12825)

3.7
plenum
available space between the underside of the panels of the access floor and the sub-floor (EN 12825)

3.8
plenum height
vertical distance between the highest point of the sub-floor and the lowest point of the underside of the access floor or hollow floor

3.9
associated construction
walls applied at the periphery of the test specimen representative of those in practice

3.10
fittings
items contained within raised access flooring systems or hollow flooring systems which penetrate panels or the hollow floor, e.g. ventilation grills, power sockets

3.11
unexposed face
upper surface of the raised or hollow floor, i.e. the opposite surface to the surface exposed to fire

4 Test equipment

The test equipment shall be as specified in EN 1363-1.

5 Test conditions

5.1 Furnace temperature

When testing using the standard time temperature curve, the furnace atmosphere and heating conditions shall conform to those given in EN 1363-1. When testing using the reduced time temperature curve, the furnace atmosphere shall conform to EN 1363-1 and the temperature in the furnace shall follow the standard time temperature curve until 500 °C has been reached.

5.2 Furnace pressure

5.2.1 Plenum heights not greater than 1,0 m

The pressure in the plenum 100 mm below the lowest point of the underside of the panel or horizontal part of the floor shall be maintained at (+ 5 ± 3) Pa relative to the outside of the furnace.

5.2.2 Plenum heights greater than 1,0 m

The pressure in the plenum 100 mm below the lowest point of the underside of the panel or horizontal part of the floor shall be maintained at a pressure calculated as follows: