SLOVENSKI STANDARD
SIST EN 1366-7:2004

01-oktober-2004

Preskusi požarne odpornosti servisnih inštalacij – 7. del: Sistemi tekočih trakov in njihove zapore

Fire resistance tests for service installations - Part 7: Conveyor systems and their closures

Feuerwiderstandsprüfungen für Installationen - Teil 7: Förderanlagen und ihre Abschlüsse

Essais de résistance au feu des installations techniques - Partie 7: Fermetures de passages pour convoyeurs et bandes transporteuses

Ta slovenski standard je istoveten z: **EN 1366-7:2004**

ICS:

13.220.50	Požarna odpornost gradbenih materialov in elementov	Fire-resistance of building materials and elements

SIST EN 1366-7:2004 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1366-7

June 2004

ICS 13.220.50

English version

Fire resistance tests for service installations - Part 7: Conveyor systems and their closures

Essais de résistance au feu des installations techniques - Partie 7: Fermetures de passages pour convoyeurs et bandes transporteuses

Feuerwiderstandsprüfungen für Installationen - Teil 7: Förderanlagen und ihre Abschlüsse

This European Standard was approved by CEN on 2 February 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of 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.

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

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

Ref. No. EN 1366-7:2004: E

Contents

Foreword

This document (EN 1366-7:2004) 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 December 2004, and conflicting national standards shall be withdrawn at the latest by December 2004.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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

Part 1: Ducts

Part 2: Fire dampers

Part 3[1)]: Penetration seals

Part 4[1)]: Linear joint seals

Part 5: Service ducts and shafts

Part 6[1)]: Raised access floors and hollow floors

Part 7: Conveyor systems and their closures

Part 8[1)]: Smoke extraction ducts

Part 9[1)]: Single compartment smoke extraction ducts

Part 10[1)]: Smoke control dampers

Part 11[1)]: Fire protective systems for essential services

Annex A and annex B are normative and annex C is informative.

[1)] In course of preparation.

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, 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

This part of this European Standard was developed to provide a method of fire resistance testing for assessing the contribution of a closure for a conveyor system together with all its anchoring parts and the frame/guide included to the fire resistance of a separating element when penetrated by a conveyor system including any relevant penetrating components.

Caution

The attention of all persons concerned with managing and carrying out this fire resistance test is drawn to the fact that fire testing may be hazardous and that there is a possibility that toxic and/or harmful smoke and gases may be evolved during the test. Mechanical and operational hazards may 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 this European Standard specifies a method of fire testing to determine the fire resistance of closure and conveyor system assemblies designed for installation within openings of separating elements, including any sealing necessary between the closure for a conveyor system and any penetrating components like conveyor tracks, electrical cables and pneumatic pipes being essential parts of the closure and conveyor system assembly together with the penetration seal.

This part of European Standard is not applicable to other test methods required to fully assess closures for conveyor systems, e.g. test methods to evaluate the serviceability and reliable functioning of interconnected systems.

The fire testing of fire dampers for heating and ventilation systems, fire doors and shutters for normal traffic paths and the movement of liquid and combustible gas, are specifically excluded from this European Standard.

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

In the absence of any European Technical Specification for closure and conveyor system assemblies, this European Standard gives advice on the classification of durability for closure and conveyor system assemblies.

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 hereafter. 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 520, *Gypsum plasterboards — Definitions, requirements and test methods.*

EN 1191, *Windows and doors — Resistance to repeated opening and closing —Test method.*

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

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

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

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

EN 12605, *Industrial, commercial and garage doors and gates — Mechanical aspects — Test methods.*

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

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

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 1363-1, prEN 1366-3, EN 1634-1, EN ISO 13943 together with the following apply.

3.1
anchoring
means of attachment of the closure for the conveyor system to the various components of the supporting or associated supporting construction to ensure correct functioning

3.2
associated supporting construction
specific construction in which the closure and conveyor system assembly is to be installed in practice and which is used to close off the furnace and provide the levels of restraint and thermal heat transfer to be experienced in normal use

3.3
clearing device
device which is generally part of the conveyor system used to clear the closure area of transportable goods during shutting of the closure for the conveyor system

3.4
closing device
device to be attached to a closure for a conveyor system which provides a return to closed condition

NOTE The closing device ensures that the closure for the conveyor system is closed from any open position.

3.5
closure and conveyor system assembly

complete assembly of the closure for the conveyor system and, where relevant, its frame or guide, which is provided for closing off a permanent opening in a separating element. This includes the anchoring parts for the connection with the separating element, a length of any penetrating component on either side of the construction and the penetration seal, any sealing system between the closure for a conveyor system, the conveyor system and any closing and/or separating device

3.6
closure area
vicinity at the opening which needs to be cleared in order to permit the shutting of the closure for the conveyor system

3.7
closure for a conveyor system
device to shut an opening for a conveyor system within a fire separating element

NOTE A closure for a conveyor system includes any component used to close the opening e.g. frames, guide rails, pivoting flaps, fittings and interlocking devices.

3.8
conveyor system
arrangement used to transport materials through an opening in a fire separating element

NOTE This can be conveyor tracks, remotely controlled or automatic equipment.

3.9
conveyor track
arrangement that guides the items to be transported

NOTE This can be e.g. belts, slides, rails, screws, chains and ducts or pipes in which airborne particles are moved.

3.10
penetration
aperture in a separating element for the passage of a penetrating component

3.11
penetrating component
elements such as cables, pneumatic and/or hydraulic pipes and the conveyor system which pass through the separating element and which may influence the performance of a closure for the conveyor system in relation to its fire resistance

3.12
penetration seal
system used to maintain the fire resistance of a separating element at the position where there is provision for penetrating components (e.g. essential parts of conveyor system, conduits, electrical cables and pipes) to pass through the fire separating element

3.13
separating device
arrangement used to separate a continuous conveyor system penetrating an opening in a fire resisting separating element to allow a closure to fully advance to its closed position

3.14
standard supporting construction
form of construction of known fire resistance used to close off the furnace and support the test specimen being evaluated

3.15
test specimen
complete closure and conveyor system assembly which is to be installed in a standard or associated supporting construction to allow it to be evaluated

4 Test equipment

The test equipment specified in EN 1363-1, and if applicable EN 1363-2, shall be used.

5 Test conditions

5.1 Heating conditions

The heating conditions and the furnace atmosphere shall conform to those given in EN 1363-1, or if applicable, EN 1363-2.

NOTE In the presence of any intumescent material used for the test specimen, requirements may exist to apply in addition to the standard temperature-time curve the slow heating curve as given in EN 1363-2.

5.2 Pressure conditions

5.2.1 Vertical installation

5.2.1.1 Closure for a conveyor system assembly installed in practice with its bottom edge not more than 0,5 m above floor level (floor position)

The furnace pressure for a vertically oriented test specimen shall conform to the conditions as given in EN 1363-1 (see Figure 1).

5.2.1.2 Closure for a conveyor system assembly installed in practice with its bottom edge more than 0,5 m above floor level (raised position)

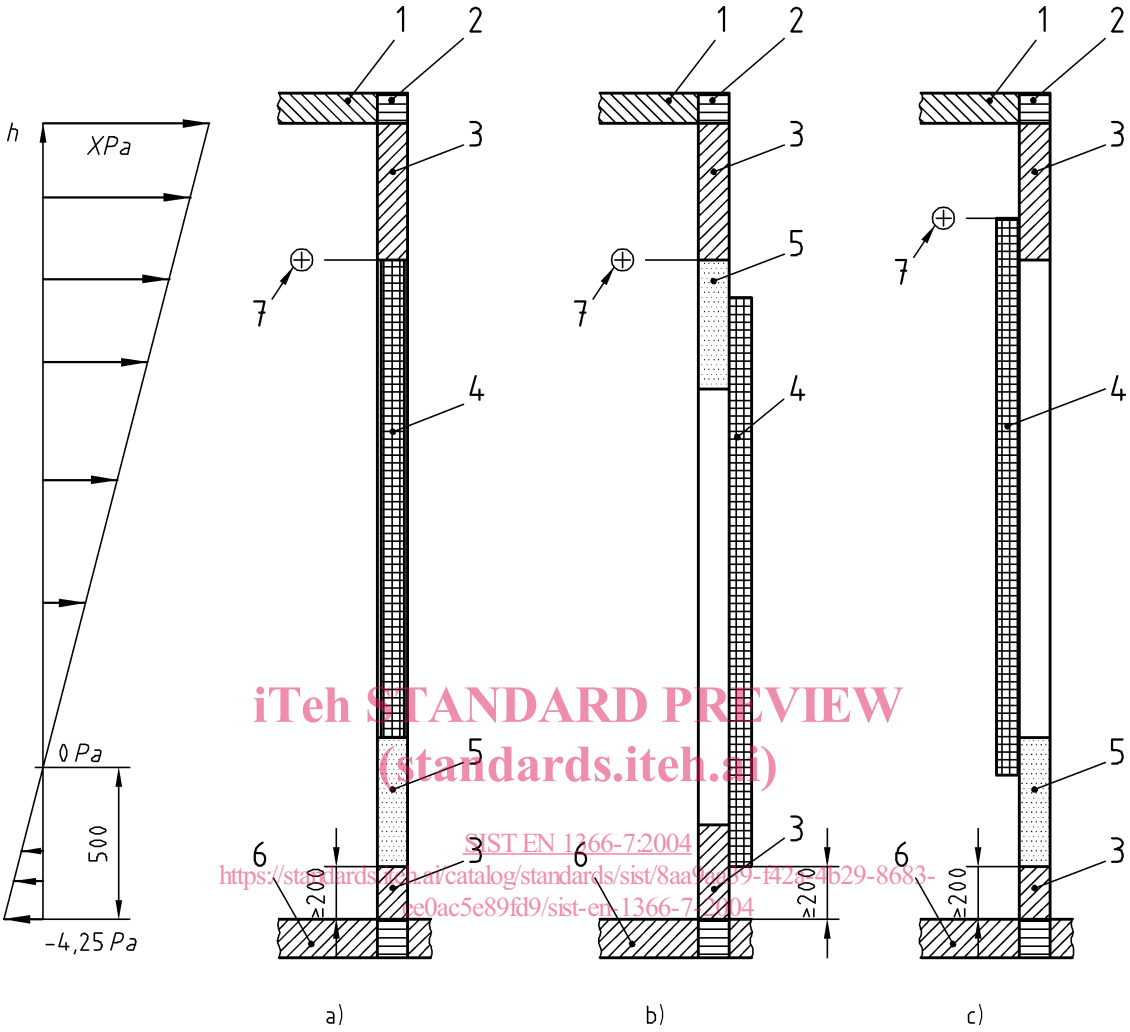
The furnace pressure for a vertically oriented test specimen shall conform to the conditions as given in EN 1363-1 with the exception that the pressure at bottom edge of the test specimen shall be maintained at a minimum of (5 ± 2) Pa. The pressure at the top of the test specimen may be larger than 20 Pa (see Figure 2).

5.2.2 Horizontal installation

The furnace pressure shall be measured at a distance of (100 ± 10) mm below the bottom horizontal plane of the test specimen. The furnace pressure shall be maintained at (20 ± 2) Pa (see Figure 6).

NOTE The bottom horizontal plane can be the bottom plane of the closure or the bottom plane of any penetration seal.

Dimensions in millimetres

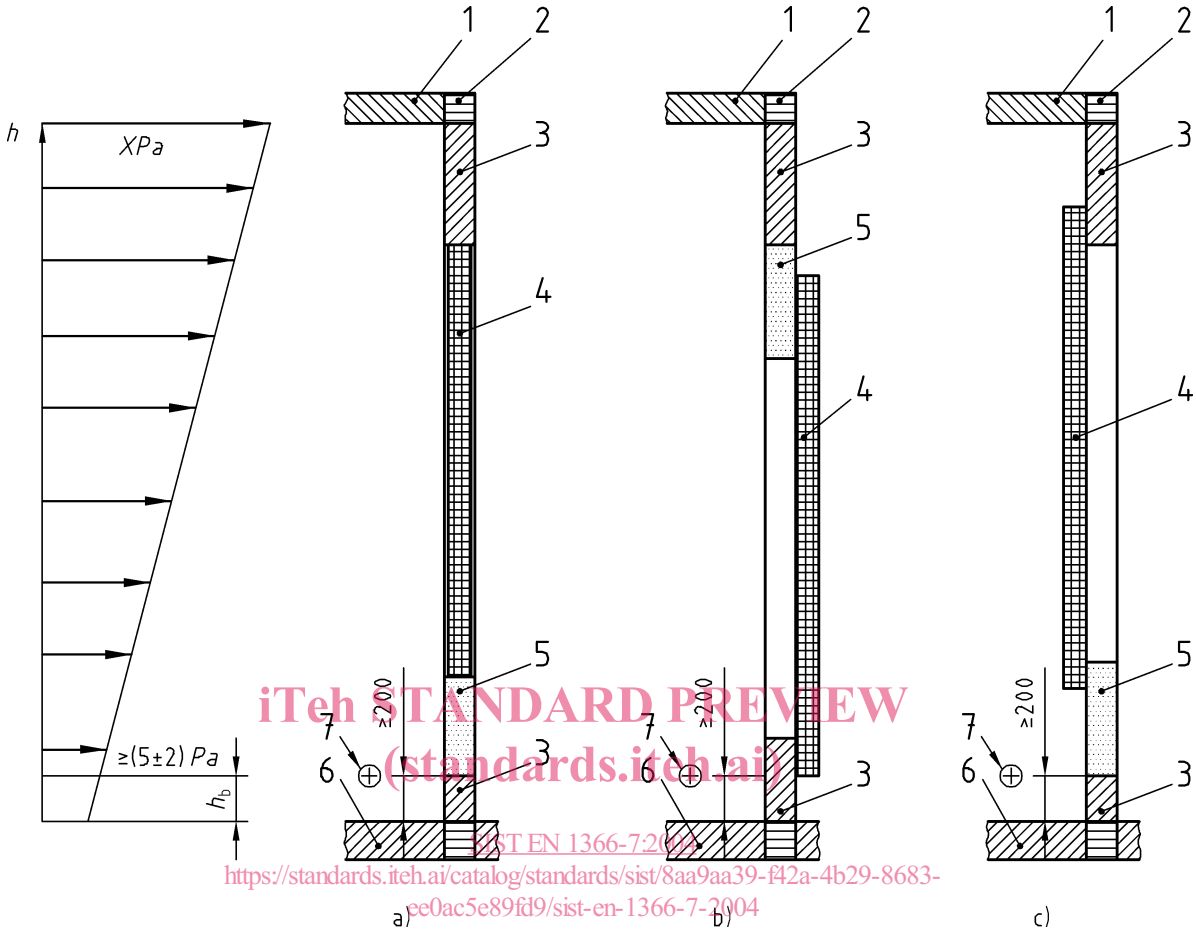


Key

1	Furnace cover	7	Controlled pressure position; maximum 20 Pa at the top of the test specimen for arrangements at floor position
2	Test frame		
3	Supporting construction		
4	Closure for a conveyor system	*h*	Height above furnace floor
5	Penetration seal	*X*	Pressure at height *h* above furnace floor
6	Furnace floor	a) to c)	Different installations of the test specimen

Figure 1 — Examples of different installations of closure and conveyor system assemblies in a vertical installation - pressure condition for floor position

Dimensions in millimetres



Key

1 Furnace cover
2 Test frame
3 Supporting construction
4 Closure for a conveyor system
5 Penetration seal
6 Furnace floor
7 Controlled pressure position; minimum (5 ± 2) Pa at the bottom of the test specimen for arrangements at raised position

h Height above furnace floor
h_b Height of the bottom edge of the test specimen above floor level
X Pressure at height h above furnace floor
a) to c) Different installations of the test specimen

Figure 2 — Examples of different installations of closure and conveyor system assemblies in a vertical installation - pressure condition for raised position

6 Test specimen

6.1 General

The test specimen shall be representative of the closure and conveyor system assembly as used in practice. Penetrating components shall be installed as given in 7.5.

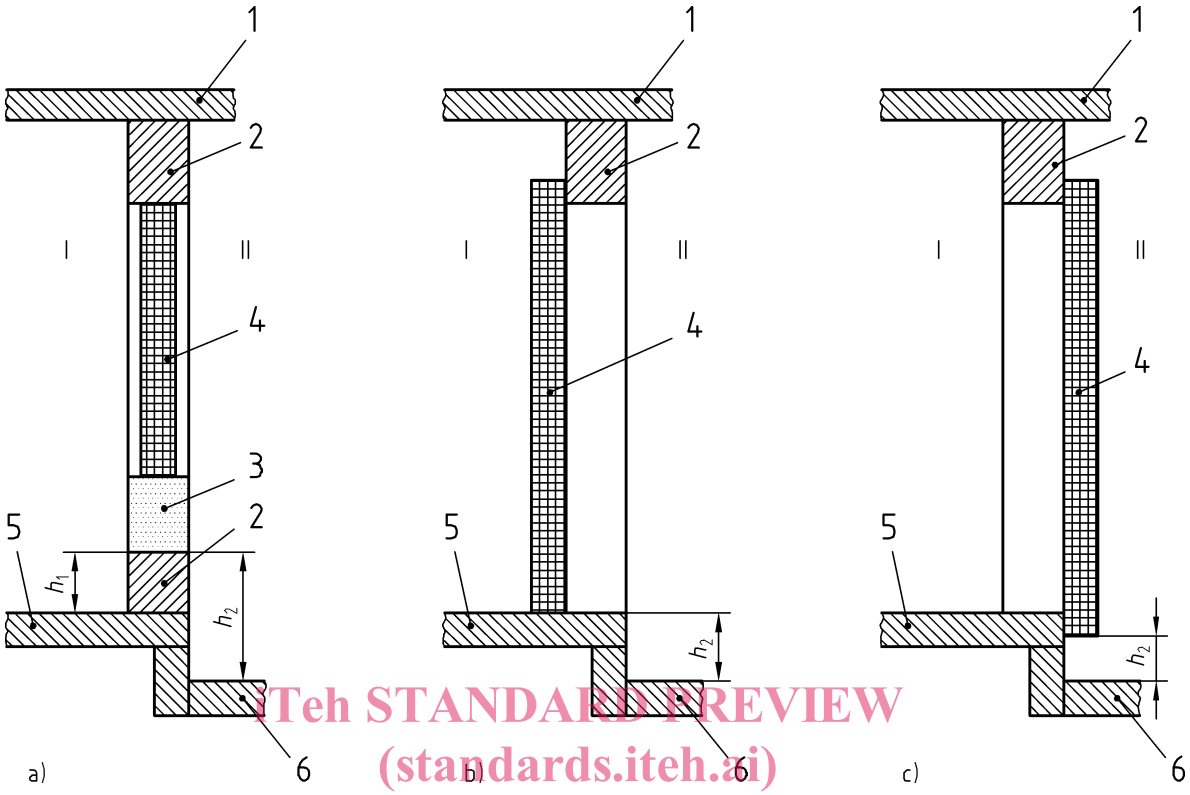
6.2 Size

The test specimen and all its components shall be full size unless limited by the size of the front opening of the furnace which will generally be 3 m × 3 m or in case of horizontal test specimen by the top opening of the furnace. Test specimens which cannot be tested at full size shall be tested to the maximum size possible consistent with 7.2.3.

6.3 Number

The number of test specimens shall be selected as described in EN 1363-1. If testing is carried out from one side only, whether due to the fact that the test specimen, including both floor arrangements on either side in terms of their height, is symmetrical or because it is only required to resist fire from one side, this shall be stated in the test report.

Figure 3 and Figure 4 give examples of different arrangements. From side I in Figure 3 the different arrangements shall be considered installations at floor position (see 5.2.1.1) provided $h_1 \leq 500$ mm. For $h_1 > 500$ mm this arrangement shall be considered a raised installation (see 5.2.1.2). Any arrangement from side II in Figure 3 shall be considered as a raised installation (see 5.2.1.2) provided $h_2 > 500$ mm. Any arrangement in Figure 4 shall be considered from either side as a raised installation (see 5.2.1.2) provided $h > 500$ mm. For $h \leq 500$ mm they shall be considered installations at floor position (see 5.2.1.1).



Key

1	Ceiling	a) to c)	Different installations of the closure and conveyor system assembly
2	Wall construction		
3	Penetration seal	h_1	Height from the floor to the bottom of the closure and conveyor system assembly from side I
4	Closure for a conveyor system		
5	Floor on side I	h_2	Height from the floor to the bottom of the closure and conveyor system assembly from side II
6	Floor on side II		

Figure 3 — Examples of different installations of closure and conveyor system assemblies in a vertical installation in practice – installation at different heights; floor on side I and side II at different heights