INTERNATIONAL STANDARD

ISO 3008-2

Second edition
2017-05

Fire-resistance tests —

Part 2: Lift landing door assemblies

Essais de résistance au feu —

Partie 2: Assemblage de porte palière d'ascenseur

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 92, *Fire safety*, SC 2, *Fire containment*, in collaboration with Technical Committee ISO/TC 178, *Lifts, escalators and moving walks*.

This second edition cancels and replaces the first edition (ISO 3008-2:2014), which has been technically revised.

A list of all the parts in the ISO 3008 series can be found on the ISO website.

Introduction

The need for certain lift landing door assemblies to act as a fire barrier against the transfer of a fire via the lift well has been identified. This document specifies a procedure for this purpose. The document follows the general principles of ISO 834-1 and, where appropriate, the principles of ISO 3008.

Lift landing doors are not included in the scope of ISO 3008.

NOTE Annexes E, F and G contain information on extrapolating the leakage rate for higher lift landing door assemblies, interpreting the leakage rate curve and marking information for the door frame assembly.

Fire-resistance tests —

Part 2:
Lift landing door assemblies

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 test elements or structures, their testing and disposal of test residues. An assessment of all potential hazards and risks to health shall be made by the laboratory and safety precautions shall be identified and provided. Written safety instructions shall be issued. Appropriate training shall be given to relevant personnel. Laboratory personnel shall ensure that they follow written safety instructions at all times.

1 Scope

This document specifies the method of test for determining the fire-resistance of lift landing door assemblies which can be exposed to a fire from the landing side. The procedure is applicable to all types of lift landing door assemblies used as a means of access to lifts in buildings and which are intended to provide a fire barrier to the spread of fire via the lift well.

The procedure allows for the measurement of integrity and, if required, the measurement of radiation and thermal insulation.

No requirements other than the verification that the specimen is operational are included for the mechanical conditioning before the test.

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.

ISO 834-1, *Fire-resistance tests — Elements of building construction — Part 1: General requirements*

ISO 834-4, *Fire-resistance tests — Elements of building construction — Part 4: Specific requirements for loadbearing vertical separating elements*

ISO 834-8, *Fire-resistance tests — Elements of building construction — Part 8: Specific requirements for non-loadbearing vertical separating elements*

ISO 3008, *Fire-resistance tests — Door and shutter assemblies*

ISO 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full — Part 1: General principles and requirements*

ISO 9705, *Reaction to fire tests — Room corner test for wall and ceiling lining products*

ISO 13943, *Fire safety — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 834-1, ISO 3008, ISO 13943 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

3.1
associated supporting construction
specific construction in which the *door assembly* (3.4) is installed as intended for use 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

3.2
lift landing door
door designed to be installed in the lift well opening on a landing to provide access to the lift

3.3
door opening
width of the clear opening allowing free passage through the open lift landing door

3.4
door assembly
complete assembly, including any frame or guide, door leaf or leaves, which is provided for access to and from the lift and the landing and includes all panels, hardware, sealing materials and any operating components

3.5
standard supporting construction
form of construction used to close off the furnace and to support the *door assembly* (3.4) being evaluated and which has a quantifiable influence on both the thermal heat transfer between the construction and the test specimen and provides known resistance to thermal distortion

3.6
leakage rate
total flow of hot gases passing through openings and gaps of the *door assembly* (3.4), due to overpressure on the landing side

4 Test equipment

4.1 The test equipment and vertical panel furnace referred to in this document shall be as specified in ISO 834-1.

4.2 The canopy shall be as specified in Annex A.

4.3 The equipment for measuring the leakage rate shall be as specified in Annex A.

4.4 The equipment for measuring heat flux shall be as specified in ISO 3008.

5 Test conditions

5.1 The furnace shall be controlled to follow the heating conditions of the standard test as defined in ISO 834-1.

5.2 The furnace shall be controlled to maintain a positive pressure on the exposed side over the entire height of the specimen such that the pressure at the sill level is in the range of 2 Pa ± 2 Pa.

6 Test specimen

6.1 Size of specimen

The specimen shall be full size or the maximum size that can be accommodated in the furnace. The typical size of the front opening of the furnace is 3 m × 3 m. In order to expose a required minimum width of 200 mm of supporting construction for a typical 3 m × 3 m furnace, the opening in the supporting construction is restricted to 2,6 m × 2,8 m (width × height).

6.2 Number of specimens

One specimen is required for the test.

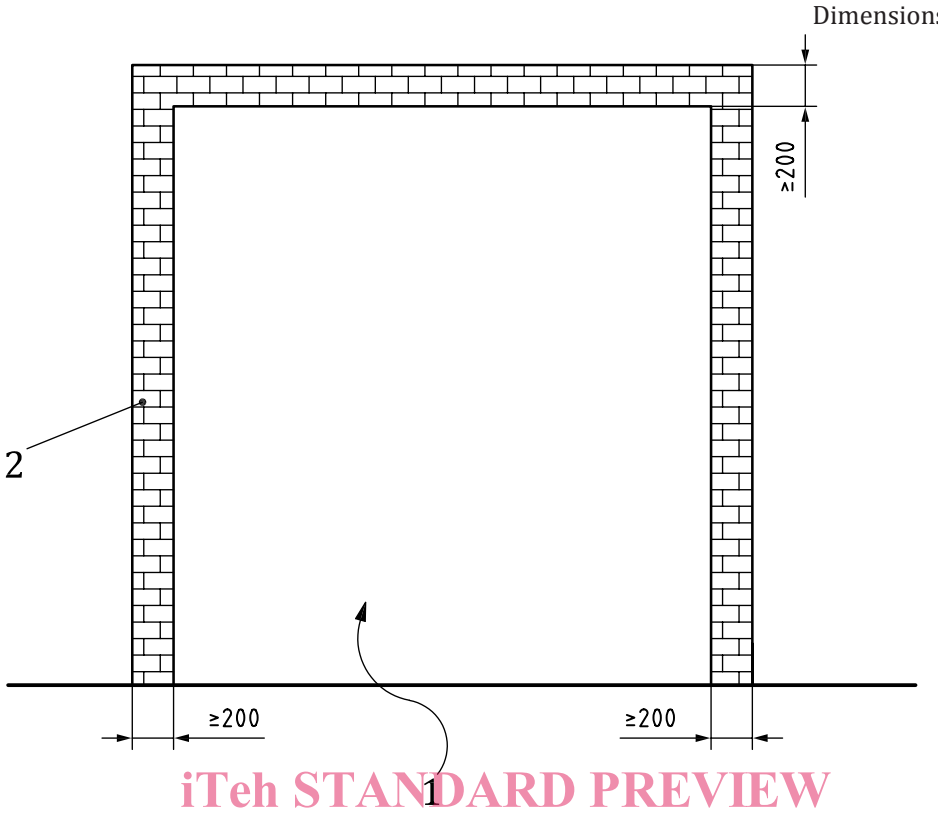
6.3 Supporting construction

6.3.1 A standard supporting construction shall be as described in Annex B.

6.3.2 An associated supporting construction shall be representative of the specific construction into which the test specimen is intended to be installed for use in practice.

6.4 Installation of specimen

6.4.1 The specimen shall be mounted in a supporting construction having a fire-resistance rating of equal or greater than the hourly rating of the assembly to be tested. The supporting construction shall be built first within the test frame leaving an aperture of the specified size. The width of the supporting construction on the two vertical sides and the top shall be not less than 200 mm. See Figure 1.



Key

1 test specimen

2 supporting construction

NOTE All dimensions are minimum.

Figure 1 — Specimen with supporting construction

6.4.2 The specimen shall be mounted in a supporting construction such that the lift landing side of the door faces the furnace.

6.4.3 The design of the connection between the door and the supporting construction, including any materials used to make the junction, shall be as used in practice with the type of the supporting construction.

6.4.5 The clearances shall correspond to the maximum that is permissible when the lift landing doors are put into service.

6.5 Verification

6.5.1 The sponsor shall provide a specification to a level of detail sufficient to allow the laboratory to conduct a detailed examination of the specimen before the test and to agree on the accuracy of the information supplied. ISO 834-1 provides detailed guidance on verification of the test specimen.

6.5.2 When the method of construction precludes a detailed survey of the specimen without having to permanently damage it, or if it is considered that it will subsequently be impossible to evaluate

construction details from a post-test examination, then one of two options shall be exercised by the laboratory in agreement with the sponsor:

a) either the laboratory shall oversee the manufacture of the lift landing door assembly subjected to the test;

b) or the sponsor shall, at the discretion of the laboratory, be requested to supply an additional assembly or that part of the assembly that cannot be verified in addition to the assembly required for the testing. The laboratory shall then choose freely which of these shall be subjected to the testing and which shall be used to verify the construction.

7 Conditioning

The test specimen as well as the supporting construction and any sealing materials used, shall be conditioned in accordance with the requirements of ISO 3008.

8 Clearances

The clearance between the moving components and the fixed parts of the door assembly shall be measured prior to the test as described in 11.1.

9 Functionality test

Prior to the test, the door shall be checked for functionality once by opening and closing to the maximum width possible by the supporting construction, with a minimum opening of width 150 mm.

10 Application of instrumentation

10.1 Temperature measurements

10.1.1 Furnace-temperature measurement instrument

Plate thermometers shall be provided in accordance with ISO 834-1. They shall be evenly distributed over a vertical plane 100 mm from the nearest plane of the test construction. There shall be at least one plate thermometer for every 1,5 m^2 of the exposed surface area of the test construction, subject to a minimum of four. The plate thermometer shall be oriented so that “side A” faces the back wall of the furnace.

10.1.2 Gas temperature measurement

One or more thermocouples shall be provided within a distance of 100 mm to the gas flow measuring system to measure the temperature of the exhaust gases drawn from the canopy. See ISO 5167-1.

10.1.3 Unexposed-face temperature measurement

10.1.3.1 General

10.1.3.1.1 Where no evaluation against the insulation criteria is required of the door assembly, or any part thereof, no temperature measurements are required.

10.1.3.1.2 Where it is required to evaluate compliance with the insulation criteria, thermocouples of the type specified in ISO 834-1 shall be attached to the unexposed face for the purpose of obtaining the average and maximum surface temperatures.

10.1.3.1.3 The average insulation performance of the door leaves and of each area of the door frame shall be determined.

10.1.3.2 Door leaf (leaves)

10.1.3.2.1 The maximum number of thermocouples placed on the leaves of the door assembly shall be twelve evenly distributed over all door leaves.

10.1.3.2.2 Position five thermocouples per door leaf, one as close as possible to the centre of the door leaf (leaves) and one as close as possible to the centre of each quarter section. These shall not be located closer than 100 mm to any joint, stiffener or through component, nor closer than 100 mm to the edge of the leaf (leaves).

10.1.3.2.3 When the door leaf (leaves) are of small size (i.e. less than 400 mm wide) such that the conventional five thermocouples cannot be fixed and/or the 100 mm minimum distance cannot be respected or the number of thermocouples is exceeding the maximum, then at least two thermocouples shall be evenly distributed on the centre and diagonals of the clear entrance surface of the door

10.1.3.2.4 When the total area of a single part of the door assembly is equal or smaller than 0,2 m^2, it shall be disregarded for the purpose of ascertaining the average unexposed face temperature.

10.1.3.3 Door frame

10.1.3.3.1 The door frame of lift landing doors can include the following parts: the horizontal top member which may include the door mechanism (on sliding and folding doors), two vertical members and an over (transom) panel. No thermocouples shall be placed on the horizontal top member including the door mechanism.

10.1.3.3.2 The side panels and over panels of more than 300 mm width or height shall be provided with one thermocouple for each square metre or part thereof, subject to a minimum of two thermocouples. These thermocouples shall not be located closer than 100 mm to any joint, stiffener or through component, nor closer than 100 mm to the edge of the side/over panel.

10.1.3.3.3 When the height of the over panels or width of the side panels are less than or equal to 300 mm, no thermocouples are required for determining the average temperature rise.

10.1.4 Position of the thermocouples to determine the maximum temperature

10.1.4.1 Door leaf (leaves)

The maximum temperature shall be determined from the thermocouples fixed to determine the average temperature rise.

10.1.4.2 Door frame

10.1.4.2.1 The maximum temperature shall be determined from the thermocouples fixed to determine the average temperature rise.

10.1.4.2.2 For vertical members with a width equal to or less than 300 mm and greater than 100 mm and for horizontal members with a height equal to or less than 300 mm and greater than 100 mm, only one thermocouple shall be fixed to the width or height of the respective member.

10.1.4.2.3 For vertical or horizontal members with width or height equal to or less than 100 mm, no temperature measurements are required.

