UL 10B

STANDARD FOR SAFETY

Fire Tests of Door Assemblies

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UL Standard for Safety for Fire Tests of Door Assemblies, UL 10B

Tenth Edition, Dated February 7, 2008

Summary of Topics

This reaffirmation of ANSI/UL 10B dated October 31, 2024 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

Text that has been changed in any manner or impacted by ULSE's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated August 30, 2024.

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FEBRUARY 7, 2008
(Title Page Reprinted: October 31, 2024)

HISTORICAL NOTE

Doors for protection of openings in walls and partitions have been subjected to fire-exposure tests by Underwriters Laboratories Inc. for a period of more than 100 years. Standard construction of wood-core, tin-clad fire doors was first formally recognized by the National Fire Protection Association in 1899. Hollow-metal doors were first submitted to Underwriters Laboratories for investigation and fire-exposure test in 1904. Fire-testing of other types of doors and shutters by UL has been conducted over a correspondingly long period. Study by a long-continued NFPA committee, of results of numerous fire tests of doors conducted under the auspices of this committee at Underwriters Laboratories in 1900 – 1901, formed the basis for many details of construction covered by Standards for protection of openings adopted by the National Fire Protection Association and by the National Board of Fire Underwriters in 1915, and published by both.

UL 10B

Standard for Fire Tests of Door Assemblies

Eighth Edition – July, 1993
Ninth Edition – April, 1997

Tenth Edition

February 7, 2008

This ANSI/UL Standard for Safety consists of the Tenth Edition including revisions through October 31, 2024.

The most recent designation of ANSI/UL 10B as a Reaffirmed American National Standard (ANS) occurred on October 31, 2024. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

The Department of Defense (DoD) has adopted UL 10B on September 6, 1989. The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

Comments or proposals for revisions on any part of the Standard may be submitted to ULSE at any time. Proposals should be submitted via a Proposal Request in the Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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CONTENTS

INTRODUCTION

1 Scope 5
2 General 5
2.1 Units of measurement 5
2.2 Undated references 5

CONTROL OF FIRE TESTS

3 Time-Temperature Curve 6
4 Furnace Temperatures 7
4A Furnace Pressure 8
5 Unexposed Surface Temperatures 10

TEST ASSEMBLIES

6 Construction and Size 11
7 Mounting for Test Purposes 11

CONDUCT OF TESTS

8 Supporting Construction 12
9 Fire Endurance Test 12
10 Hose Stream Test 12

REPORT

11 General 13

CONDITIONS OF ACCEPTANCE

12 General 13
13 Specific 14
13.1 All doors 14
13.2 Swinging doors 14
13.3 Sliding and rolling doors 15
14 Glazing Assemblies 16

APPENDIX A

A1 Standard Time-Temperature Curve for Control of Fire Tests 17

APPENDIX B

B1 Requirements for Thermocouple Pads 19

Appendix C

C1 Hose Stream Pattern 20

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INTRODUCTION

1 Scope

1.1 These methods of fire tests are applicable to door assemblies of various materials and types of construction for use in wall openings to retard the passage of fire.

1.2 Tests made in conformity with these test methods register performance during the test exposure; and such tests shall not be construed as determining compliance for use after exposure to fire.

1.3 It is the intent that tests made in conformity with these test methods develop data to enable regulatory bodies to determine the compliance of door assemblies for use in locations where fire resistance of a specified duration is required.

1.4 These methods are intended to evaluate the ability of a door assembly to remain in an opening during a predetermined test exposure.

1.5 The tests expose a specimen to a standard fire exposure controlled to achieve specified temperatures throughout a specified time period, followed by the application of a specified standard fire hose stream. The exposure, however, is not representative of all fire conditions, which vary with changes in the amount, nature, and distribution of fire loading, ventilation, compartment size and configuration, and heat sink characteristics of the compartment. It does, however, provide a relative measure of fire performance of door assemblies under these specified fire exposure conditions.

1.6 Any variation from the construction or conditions that are tested is capable of substantially changing the performance characteristics of the assembly.

1.7 The methods do not provide the following:

a) Full information as to performance of all door assemblies in walls constructed of materials other than those tested.

b) Evaluation of the degree by which the door assembly contributes to the risk of fire by generation of smoke, toxic gases, or other products of combustion.

c) A temperature limit on the unexposed side of the door assembly.

d) A limit on the number of openings intended in glazed areas or of the number and size of lateral openings between the door and frame.

e) Measurement of the degree of control or limitation of the passage of smoke or products of combustion through the door assembly.

2 General

2.1 Units of measurement

2.1.1 When a value for measurement is followed by a value in other units in parentheses, the first stated value is the requirement.

2.2 Undated references

2.2.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

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CONTROL OF FIRE TESTS

3 Time-Temperature Curve

3.1 The fire exposure of door assemblies shall be controlled to conform to the applicable portion of the standard time-temperature curve shown in Figure 3.1. The points on the curve that determine its character are:

a) 1000°F (538°C) at 5 minutes,

b) 1300°F (704°C) at 10 minutes,

c) 1462°F (795°C) at 20 minutes,

d) 1550°F (843°C) at 30 minutes,

e) 1638°F (892°C) at 45 minutes,

f) 1700°F (927°C) at 1 hour,

g) 1792°F (978°C) at 1-1/2 hours,

h) 1850°F (1010°C) at 2 hours,

i) 1925°F (1052°C) at 3 hours, and

j) 2000°F (1093°C) at 4 hours.

3.2 For a more detailed definition of the time-temperature curve, see Appendix A.

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