

UL 1715

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Fire Test of Interior Finish Material



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January 26, 1994

Standard for

Fire Test of Interior Finish Material

UL 1715, Second Edition

Accompanying this transmittal notice is a copy of the Second edition of UL 1715.

THIS EDITION OF THE STANDARD IS NOW IN EFFECT.

Revised and/or additional pages may be issued from time to time.



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UL 1715

Standard for

Fire Test of Interior Finish Material

First Edition – October, 1989

Second Edition

January 26, 1994

Approval as an American National Standard (ANSI) covers the numbered paragraphs on pages dated January 26, 1994. These pages should not be discarded when revised or additional pages are issued if it is desired to retain the ANSI approved text.

An effective date included as a note immediately following certain requirements is one established by Underwriters Laboratories Inc.

Approved as ANSI/UL 1715-1990, November 19, 1990

Revisions of this standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest published set of revision pages.

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FOREWORD

A. This Standard contains basic requirements for products covered by Underwriters Laboratories Inc. (UL) under its Follow-Up Service for this category within the limitations given below and in the Scope section of this Standard. These requirements are based upon sound engineering principles, research, records of tests and field experience, and an appreciation of the problems of manufacture, installation, and use derived from consultation with and information obtained from manufacturers, users, inspection authorities, and others having specialized experience. They are subject to revision as further experience and investigation may show is necessary or desirable.

B. The observance of the requirements of this Standard by a manufacturer is one of the conditions of the continued coverage of the manufacturer's product.

C. A product which complies with the text of this Standard will not necessarily be judged to comply with the Standard if, when examined and tested, it is found to have other features which impair the level of safety contemplated by these requirements.

D. A product employing materials or having forms of construction differing from those detailed in the requirements of this Standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be judged to comply with the Standard.

E. UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The opinions and findings of UL represent its professional judgment given with due consideration to the necessary limitations of practical operation and state of the art at the time the Standard is processed. UL shall not be responsible to anyone for the use of or reliance upon this Standard by anyone. UL shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Standard.

F. Many tests required by the Standards of UL are inherently hazardous and adequate safeguards for personnel and property shall be employed in conducting such tests.

INTRODUCTION

1 Scope

1.1 This test method describes the testing procedures and requirements applicable to the classification of interior finish material assemblies by use of a standardized room fire exposure.

1.2 This test method is intended for use in the evaluation of the flammability contribution of wall material assemblies, ceiling material assemblies, or both, exposed to early fire growth under specified room fire exposure conditions. The effectiveness of fire barrier materials as protection for other combustible materials or components within the assembly is of primary interest for this evaluation.

1.3 Data with respect to surface flammability characteristics of interior finish materials is provided by evaluations in accordance with the Standard for Test for Surface Burning Characteristics of Building Materials, UL 723, as described in 1.5.

1.4 The results obtained by use of this test method are intended to be used as one element of the total body of data used in the processes of selecting and controlling materials for use in building construction.

1.5 Related classification information for building materials and assemblies intended for specific end-uses is promulgated under categorical designations in accordance with specified testing procedures. These classification categories are as follows:

- a) **Surface Burning Characteristics Classification** – Establishes the comparative burning characteristics of building materials and assemblies by measurement of flame spread over exposed surfaces and the density of the smoke developed during the fire exposure period. This test method is described in the Standard for Test for Surface Burning Characteristics of Building Materials, UL 723.
- b) **Fire Resistance Classification** – Establishes hourly fire resistance ratings of building assemblies through large-scale fire exposures under specific loading conditions. This test method is described in the Standard for Fire Tests of Building Construction and Materials, UL 263.
- c) **Roof-Covering Materials Classification** – Establishes performance measurements for coverings relative to resistance to exterior fire spread and penetration. This test method is described in the Standard for Test Methods for Fire Resistance of Roof-Covering Materials, UL 790.
- d) **Roof-Deck Construction Materials Classification** – Establishes performance measurements for roofing systems with respect to resistance to the spread-of-flame and damage from underdeck interior fire exposure. Information pertaining to the test method used in this classification is published in the General Information section, under Guide TGKX, in Underwriters Laboratories Inc.'s Annual Building Materials Directory.

1.6 A product that contains features, characteristics, components, materials, or systems new or different from those in use when the standard was developed, and that involves a risk of fire, electric shock, or injury to persons, shall be evaluated using the appropriate additional component and end-product requirements as determined necessary to maintain the level of safety for the user of the product as originally anticipated by the intent of this standard.

2 General

2.1 Units of measurement

2.1.1 If a value for measurement is followed by a value in other units in parentheses, the second value may be only approximate. 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.

PERFORMANCE

3 General

3.1 A nominal 30 pound (13.6 kg) wood crib is to be used to produce a uniform flame for direct impingement on the walls and ceiling in the corner of an 8 by 12 by 8 foot (2.44 by 3.66 by 2.44 m) high room. The contribution of the wall, ceiling, or both wall and ceiling materials or assemblies, to fire growth is to be defined in terms of:

- a) The time history of temperature development within the room,
- b) The time from ignition to flameover, and
- c) The maximum observed flame progression.

The test is to be conducted with natural ventilation to the room provided through a single doorway 2-1/2 by 7 feet (0.76 by 2.13 m) in width and height, respectively.

3.2 During the test the observed surface burning shall not extend to the extremities of the test specimen nor shall flame project through the doorway opening at any time.

3.3 At the conclusion of the test, observations shall show that the combustive damage (that is, burning, charring, and the like) of the test materials within the assembly diminishes at increasing distance from the immediate fire exposure area.

3.4 A report of the test results shall be prepared as specified in Report, Section 11.

4 Ignition Source

4.1 The ignition source for the test is to be a wood crib weighing 30 pounds (13.6 kg), having dimensions of 15 by 15 by 15 inches (381 by 381 by 381 mm), and constructed of 10 tiers of spruce, pine, or fir lumber strips. Each strip is to be 15 inches long, and is to have a cross section of trade size 2 by 2 inches [nominal 1-1/2 by 1-1/2 inches (38 by 38 mm)]. Each tier is to consist of five parallel strips arranged with equal spacing between strips so that the tier dimensions are 15 by 15 inches. Within the crib, the strips in each tier are to lie at right angles to the strips in the tier below. Adjacent tiers are to be fastened to each other by chisel-point staples at each point of contact between strips. Each staple is to have a flat top, and the two pointed ends each are to be 1-1/4 inch (32 mm) long and on 1 inch (25 mm) centers.

4.2 The crib is to be placed into a curing cell, at a temperature of $120 \pm 10^\circ\text{F}$ ($48.9 \pm 5.5^\circ\text{C}$) and 20 ± 5 percent relative humidity, until constant weight is achieved.

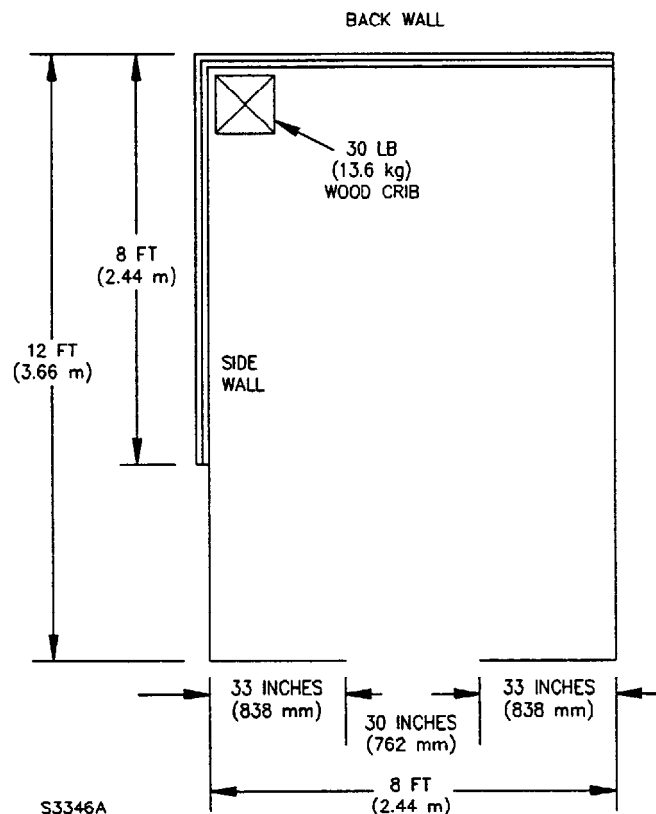
4.3 The wood crib is to be removed from the curing cell not more than 1 hour prior to the start of the test.

4.4 Immediately prior to test, the crib weight is to be adjusted to a final weight of 30 ± 1 pound (13.61 ± 0.45 kg) by the addition of conditioned strips.

5 Fire Test Room Geometry and Construction

5.1 With the test specimens in place, the interior dimensions of the test room floor are to be 8 feet $\pm$ 1 inch by 12 feet $\pm$ 1 inch ($2.4 \text{ m} \pm 25 \text{ mm}$ by $3.66 \text{ m} \pm 25 \text{ mm}$). The finished ceiling is to be 8 feet $\pm$ 0.5 inch ($2.44 \text{ m} \pm 13 \text{ mm}$) above the floor. There are to be four walls at right angles defining the room (see Figure 5.1).

Figure 5.1
Room-corner test



5.2 The 2-1/2 by 7 foot (0.76 by 2.13 m) doorway is to be in the center of one of the 8 by 8 foot (2.44 by 2.44 m) walls. There are to be no other wall or ceiling openings. The door frame is to be constructed so that the height and width remain essentially unchanged during the test period to a tolerance of ± 1 percent.

5.3 There is to be a framed structure resting on a concrete floor, with an interior membrane of calcium silicate board of 46 pounds per cubic foot (736 kg/m^3) density and 1/2 inch (13 mm) nominal thickness, defining the edges of the ceiling and walls to which the test specimens are attached. The frame is to accommodate the specimens under test, so that deflection or collapse during the test period approximates anticipated field fire conditions. Self-supporting panels may not require the frame or calcium silicate board substrate.