

# UL 1820

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## Fire Test of Pneumatic Tubing for Flame and Smoke Characteristics



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**May 31, 1994**

**Standard for**

**Fire Test of Pneumatic Tubing for Flame and Smoke Characteristics**

**UL 1820, Second Edition**

Accompanying this transmittal notice is a copy of the Second edition of UL 1820.

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 1820**

**Standard for**

**Fire Test of Pneumatic Tubing for Flame and  
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**First Edition – March, 1989**

**Second Edition**

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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 a description of the basic test method(s) for evaluating 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. This test method(s) is 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. It is subject to revision as further experience and investigation may show is necessary or desirable.

B. The consistent and uniform production of the product so that it will perform in the manner indicated by the coverage is one of the conditions of the continued coverage of the manufacturer's product.

C. A product which performs in a specified manner will not necessarily be judged to be eligible for coverage if, when examined and tested, it is found to have other features which impair the significance associated with such performance.

D. 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.

E. 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 is a test method for determining values of flame propagation distance and optical smoke density for pneumatic tubing that is to be installed in ducts, plenums, and other spaces used for environmental air. The purpose of this test method is to determine whether the flame-propagation and smoke-generating characteristics of these tubes are in accordance with the provisions of Installation of Air Conditioning and Ventilating Systems, NFPA 90A. Exception No. 3 of Section 2-2.1.2 of NFPA 90A states that pneumatic tubing having adequate fire-resistant and low-smoke-producing characteristics may be installed in the space between the ceiling and the floor or roof above, used as an air handling plenum.

1.2 This test method does not cover the construction requirements for tubes for pressure or other performance requirements.

1.3 A product that contains features, characteristics, components, materials, or systems new or different from those covered by the requirements in this standard, 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 acceptable level of safety as originally anticipated by the intent of this standard. A product whose features, characteristics, components, materials, or systems conflict with specific provisions of this standard cannot be judged to comply with this standard. Where considered appropriate, revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation 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 Test Assembly

#### 3.1 Fire test chamber

3.1.1 The fire test chamber is to consist of a horizontal duct having the shape and size shown in Figures 3.1 – 3.3. The sides and base of the duct are to be lined with insulating masonry as illustrated in Figure 3.2 consisting of a row of refractory fire brick<sup>2</sup>. One side is to be provided with a row of double-pane (inside pane mounted flush with inner wall – see Figure 3.2) pressure-tight (as described in 5.2 and 5.3)