

Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas





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March 29, 1996

Standard for

Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas

UL 300, Second Edition

Accompanying this transmittal notice is a copy of the Second edition of UL 300.

THIS EDITION OF THE STANDARD IS NOW IN EFFECT.

The requirements in this standard are substantially in accordance with UL's bulletins on this subject dated June 30, 1995 and August 29, 1995. These bulletins are now obsolete and may be discarded.

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

MARCH 29, 1996

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UL 300

Standard for

**Fire Testing of Fire Extinguishing Systems for
Protection of Restaurant Cooking Areas**

First Edition – July, 1992

Second Edition

March 29, 1996

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

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 These requirements cover the performance during fire tests of pre-engineered fire extinguishing system units intended for the protection of restaurant cooking areas.

1.2 Pre-engineered fire extinguishing system units, agents, or both are required to comply also with the requirements for construction and performance as applicable to specific types, designs, sizes, and arrangements; and all such additional requirements which apply are not within the scope of these requirements for fire tests.

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 involve a risk of fire, electric shock, or injury to persons shall be evaluated using the appropriate additional component and end-product requirements as required to maintain the level of safety as originally anticipated by the intent of this Standard. A product whose features, characteristics, components, materials, or systems conflict with specific requirements or provisions of this Standard is not judged to comply with this Standard. Where appropriate, revision of requirements are proposed and adopted in conformance with the methods employed for development, revision, and implementation of this Standard.

2 General

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

2.2 The term "product" as used in these requirements refers to all fire extinguishing systems or any part thereof covered by these requirements unless specifically noted otherwise.

3 Components

3.1 Except as indicated in 3.2, a component of a product covered by this standard shall comply with the requirements for that component.

3.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard; or
- b) Is superseded by a requirement in this standard.

3.3 A component shall be used in accordance with its recognized rating established for the intended conditions of use.

3.4 Specific components are recognized as being incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions for which they have been recognized.

4 Glossary

4.1 For the purpose of these requirements, the following definitions apply.

4.2 **CYLINDER/VALVE ASSEMBLY** – A container that incorporates a valve and that provides storage of the extinguishing agent and expellant gas until the valve is actuated. For cartridge operated units, this assembly includes the extinguishing agent storage container and cartridge mechanism. When actuated, the valve releases the agent into the distribution network of the extinguishing system.

4.3 **COOKING APPLIANCE** – A cooking device that has or is capable of having a surface of liquid grease or one in which grease is involved, such as a deep fat fryer, griddle, range, chain broiler, electric char-broiler, charcoal broiler, mesquite broiler, gas-radiant char-broiler, wok, tilt skillets, and similar appliances. The protected area is limited to the cooking surfaces of the appliance only.

4.4 **DISCHARGE RATE** – The ratio of the quantity of agent discharged from a nozzle to the discharge time measured within ± 1 second. When a minimum discharge rate is indicated, reference is made to the minimum quantity of agent discharged and the time measured within ± 1 second.

4.5 **DISCHARGE NOZZLE** – A device that is used to uniformly distribute the extinguishing agent over or into a specific area.

4.6 **DISCHARGE TIME** – The time interval between the first appearance of extinguishing agent at the nozzle and the time at which the discharge becomes predominantly gaseous.

4.7 **DUCT (OR DUCT SYSTEM)** – A continuous enclosed passageway for the transmission of air and cooking vapors.

4.8 **EXPELLANT GAS** – Dry nitrogen, dry air, or other gas used to facilitate the discharge of the extinguishing agent.

4.9 **EXTINGUISHING SYSTEM UNIT** – Identified components that are assembled into a system for the discharge of an extinguishing agent through fixed piping and nozzles for the purpose of extinguishing fires.

4.10 **GAS CARTRIDGE** – A container that provides storage for an expellant gas.

4.11 **GREASE** – For test purposes grease is new vegetable shortening incorporating an antifoaming agent. For hood and duct and broiler testing only, grease is to be new or used vegetable shortening, or rendered animal fat.

4.12 **GREASE FILTER** – A component of a grease vapor removal system that deflects the air and vapors passing through it in such a manner as to result in the grease vapors to concentrate, condense, or both, for the purpose of grease collection.

4.13 **PLENUM** – The volume of enclosed space between the grease filters and the portion of the hood above the grease filters in a hood and duct system.

4.14 **HOOD** – A device provided as part of an exhaust system to direct and capture grease vapors and exhaust gases from a cooking appliance.

4.15 **LOW QUALITY FATTY BEEF STEAKS** – Steaks that contain 20 – 30 percent fat or gristle, well marbled, and uniform in size. An example of a cut of meat which meets the requirement is "goose neck round," which is 70 – 80 percent lean.