



CAN/ULC-S508:2018

STANDARD FOR THE RATING AND FIRE TESTING OF FIRE EXTINGUISHERS



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Standard for the Rating and Fire Testing of Fire Extinguishers, CAN/ULC-S508:2018

Fifth Edition, Dated August 6, 2018

Summary of Topics

This New Edition of of CAN/ULC S508 includes the following changes in requirements:

Class C extinguisher test

Update Commercial Grade Heptane Specifications

The new/revised requirements are substantially in accordance with Proposal(s) on this subject dated October 27, 2017.

PLEASE NOTE THAT CERTAIN CODES MAY REFER TO A SUPERSEDED VERSION OF THIS STANDARD. IN THOSE INSTANCES, THE RELEVANT VERSIONS ARE AVAILABLE FOR PURCHASE.

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AVADOCUMENTS

Prepared by:



ULC Standards
CAN/ULC-S508:2018
Fifth Edition



Underwriters Laboratories Inc.
ANSI/UL 711
Eighth Edition

Rating and Fire Testing of Fire Extinguishers

August 6, 2018



ANSI/UL 711-2018



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This ANSI/UL Standard for Safety consists of the Eighth Edition.

The most recent designation of ANSI/UL 711 as an American National Standard (ANSI) occurred on August 6, 2018. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface.

The Department of Defense (DoD) has adopted UL 711 on July 2, 1990. 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 UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

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ULC Preamble

International Classification for Standards (ICS):13.220.10; 19.040

This Standard has been developed in compliance with the requirements of Standards Council of Canada (SCC) for accreditation of a Standards Development Organization.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patents rights. ULC Standards shall not be held responsible for identifying any or all such patents rights.

This Standard is intended to be used for conformity assessment.

The Fifth Edition of this ULC Standard was based on, and superseded, the Fourth Edition of CAN/ULC S508.

This CAN/ULC-S508 Standard is under continuous maintenance, whereby each revision is approved in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization. In the event that no revisions are issued for a period of four years from the date of publication, action to revise, reaffirm, or withdraw the standard shall be initiated.

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

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ANNEX A (normative)

Preface

This is the common UL and ULC Standard for Rating and Fire Testing of Fire Extinguishers. It is the fifth edition of CAN/ULC-S508, and the eighth edition of ANSI/UL 711.

This Joint Standard was prepared by Underwriters Laboratories Inc., ULC Standards, and the UL/ULC Extinguisher Technical Harmonization Committee. The efforts and support of the Harmonization Technical Committee are gratefully acknowledged.

Only metric SI units of measurement are used in this Standard. If a value for measurement is followed by a value in other units in parentheses, the second value may be approximate. The first stated value is the requirement.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

Annex A identified as normative, forms a mandatory part of this Standard.

Note: *Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.*

Level of harmonization

This Standard is published as an identical standard between UL and ULC Standards. An identical standard is a standard that is the same in technical content except for conflicts in Codes and Governmental Regulations. Presentation shall be word for word except for editorial changes.

Interpretations

The interpretation by the standards development organization of an identical or equivalent standard shall be based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision shall be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

A INTRODUCTION

1 Scope

1.1 These requirements cover rating, and performance during fire tests, of fire extinguishers intended for use in attacking Class A, B, C, D, and K fires as defined herein. These requirements also cover performance during fire tests of fire extinguishing agents for application on Class D fires. The ultimate rating of an extinguisher or the prescribed use of an extinguisher or fire extinguishing agent is based on its fire-extinguishing potential as determined by fire tests and presupposes installation and use in accordance in the United States with the Standard for Portable Fire Extinguishers, NFPA 10, and with the National Fire Code of Canada.

1.2 Fire extinguishers, fire extinguishing agents, or both shall also comply with the requirements for construction and performance as applicable to specific types, designs, sizes, and arrangements. Such additional requirements include ANSI/UL 8 CAN/ULC S554, ANSI/UL154 CAN/ULC S503, ANSI/UL299 CAN/ULC S504, ANSI/UL 626 CAN/ULC S507, and ANSI/ UL2129 CAN/ULC S566 and are not within the scope of these requirements.

2 Units of measurement

2.1 The metric unit shall be designated as the official unit for purposes of this standard. Where values of measurement are specified in both SI and English units, either unit is used. In cases of dispute, the metric unit shall be used.

3 Reference publications

3.1 See Annex A for a list of publications referenced in this standard. 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. When the latest edition of a standard is not applicable, the appropriate edition is indicated accordingly in Annex A.

4 Glossary

4.1 For the purpose of this standard the following definitions apply.

4.2 AFFF – Aqueous film-forming foam.

4.3 AUTOIGNITION TEMPERATURE – The temperature at which the test fuel ignites automatically.

4.4 CONTROL – A reduction in fire intensity of approximately 90 percent.

4.5 EFFECTIVE DISCHARGE – The time of discharge of extinguishing agent from the extinguisher until gas point.

4.6 FFFP – Film-forming fluoroprotein.

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4.7 GAS POINT – The point in time when the discharge changes from the extinguishing agent alone to a gas and extinguishing agent combination.

4.8 LETTER DESIGNATIONS – The letter designates the general class of fire for which the extinguisher or agent is acceptable:

Class A Fires – Fires that involve ordinary combustible materials such as wood, cloth, paper, rubber, and many plastics.

Class B Fires – Fires that involve flammable liquids, oils, petroleum greases, tars, oil-base paints, solvents, lacquers, alcohols, and flammable gases.

Class C Fires – Fires that involve energized electrical equipment where the electrical nonconductivity of the fire extinguishing agent as discharged is of importance. (When electrical equipment is de-energized, extinguishers rated for Class A or B fires are used.)

Class D Fires – Fires that involve combustible metals, such as magnesium, titanium, zirconium, sodium, lithium, and potassium.

Class K Fires – Fires that involve cooking appliances with flammable cooking oils and fats, vegetable or animal.

4.9 NUMERAL DESIGNATIONS – The numeral that indicates the extinguishing potential of a fire extinguisher.

4.10 UNBURNED WOOD – The minimum clear, uncharred area where the thickness is measured across the smallest dimension of the test member following a fire test.

5 Ratings

5.1 Extinguishers are classed and rated according to their fire extinguishing potential which is indicated by numeral and letter designations.

5.2 The numerical portion of Class A ratings of extinguishers is developed on the basis of comparative fire tests using various sizes of wood-crib and wood-panel.

5.3 The numerical portion of Class A ratings of large sizes of extinguishers (usually wheeled) is developed on the basis of wood-crib fires only.

5.4 The numerical portion of Class B ratings of extinguishers is developed on the basis of fire tests using square steel pans in specific size increments and a flammable liquid test fuel similar to commercial grade heptane. The fire extinguishing classification is equivalent to 40 percent of the area of fire consistently extinguished by an expert operator. The numeral thus derived is an approximate indication of the relative fire extinguishing potential of the extinguisher.

5.5 There are no numerical components for Class C ratings of extinguishers, as only the electrical nonconducting characteristics of the agent when being discharged are significant, and no effort is made to indicate the extinguishing potential for fires that involve electrical equipment.