

UL 154

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Carbon-Dioxide Fire Extinguishers

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UL Standard for Safety for Carbon-Dioxide Fire Extinguishers, UL 154

Ninth Edition, Dated February 28, 2005

Revisions: This Standard contains revisions through and including January 31, 2007.

Summary of Topics

These revisions to ANSI/UL 154 include a revision to the temperature and humidity requirements for the nameplate exposure and adhesion tests.

Text that has been changed in any manner is marked with a vertical line in the margin.

The revised requirements are substantially in accordance with UL's Proposal(s) on this subject dated August 11, 2006.

The revisions dated January 31, 2007 include a reprinted title page (page1) for this Standard.

As indicated on the title page (page 1), this UL Standard for Safety is an American National Standard. Attention is directed to the note on the title page of this Standard outlining the procedures to be followed to retain the approved text of this ANSI/UL Standard.

The UL Foreword is no longer located within the UL Standard. For information concerning the use and application of the requirements contained in this Standard, the current version of the UL Foreword is located on ULStandardsInfoNet at: <http://ulstandardsinfo.net/ulforeword.html>

The master for this Standard at UL's Northbrook Office is the official document insofar as it relates to a UL service and the compliance of a product with respect to the requirements for that product and service, or if there are questions regarding the accuracy of this Standard.

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New product submittals made prior to a specified future effective date will be judged under all of the requirements in this Standard including those requirements with a specified future effective date, unless the applicant specifically requests that the product be judged under the current requirements. However, if the applicant elects this option, it should be noted that compliance with all the requirements in this Standard will be required as a condition of continued Listing and Follow-Up Services after the effective date, and understanding of this should be signified in writing.

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This Standard consists of pages dated as shown in the following checklist:

Page	Date
1-2	January 31, 2007
3-23	February 28, 2005
24-25	January 31, 2007
26-38	February 28, 2005

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Underwriters' Laboratories of Canada
CAN/ULC-S503
Fourth Edition



Underwriters Laboratories Inc.
ANSI/UL 154
Ninth Edition

Carbon-Dioxide Fire Extinguishers

February 28, 2005

(Title Page Reprinted: January 31, 2007)

This common standard has been jointly revised on January 31, 2007. For this purpose, ULC and UL are issuing amendment pages dated January 31, 2007.



ANSI/UL 154-2007

Approved
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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 set of revised requirements. 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 <http://csds.ul.com>.

The most recent designation of ANSI/UL 154 as an American National Standard (ANSI) occurred on January 31, 2007.

This ANSI/UL Standard for Safety, which consists of the Ninth edition with revisions through January 31, 2007, is under continuous maintenance, whereby each revision is ANSI approved upon publication.

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ANNEX B

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Preface

This is the common UL and ULC Standard for Carbon-Dioxide Fire Extinguishers. It is the Fourth edition of CAN/ULC-S503, and the Ninth edition of ANSI/UL 154.

This common Standard was prepared by Underwriters Laboratories Inc., Underwriters' Laboratories of Canada and the manufacturing industry. The efforts and support of the Extinguisher Technical Harmonization Committee are gratefully acknowledged.

This Standard was formally approved by the ULC Committee on Portable Fire Extinguishers.

The Annexes in this Standard are for information purposes only.

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 used an ISO format, but is not based on, nor shall it be considered equivalent to, an ISO standard. This standard is published as an identical standard.

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 SDO 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 SDO. 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 SDOs to more accurately reflect the intent.

UL Effective Date

As of August 14, 2007 all products Listed or Recognized by UL must comply with the requirements in this Standard.

A UL effective date is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved Standard.

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INTRODUCTION

1 Scope

1.1 These requirements cover the construction and performance, exclusive of performance during fire tests, of portable carbon-dioxide fire extinguishers. Carbon-dioxide fire extinguishers are intended to be utilized in accordance with the Standard for Portable Fire Extinguishers, NFPA 10 and the National Fire Code of Canada.

1.2 The requirements for performance during fire testing of carbon-dioxide fire extinguishers are specified in the Binational Standard for Rating and Fire Testing of Fire Extinguishers, ANSI/UL 711 CAN/ULC-S508.

1.3 As used in these requirements, the term "extinguisher" refers to all extinguishers or any part thereof covered by these requirements, unless specifically noted otherwise.

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 Components

4.1 Except as indicated in 4.2, a component of a product covered by this standard shall comply with the requirements for that component. A component shall comply with both the Underwriters Laboratories Inc. and the Underwriters' Laboratories of Canada standards for the component.

4.2 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.

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

4.4 Specific components are 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.

5 Glossary

5.1 For the purpose of this standard, the following definitions apply.

5.2 DISPOSABLE (NONRECHARGEABLE) FIRE EXTINGUISHER – A fire extinguisher not capable of nor intended to undergo complete maintenance including internal inspection of cylinder, replacement of parts and seals and hydrostatic testing.

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

5.4 GALVANIC COMPATIBILITY – Fire extinguisher cylinder and component parts, which are not susceptible to 10-day, stress corrosion cracking nor corrosion from combination of dissimilar materials.

5.5 GAS POINT – The point in time when the combined snow and gas discharge changes into a purely gaseous condition.

5.6 PORTABLE FIRE EXTINGUISHER – A fire extinguisher carried or on wheels and operated by hand.

5.7 RECHARGEABLE (REFILLABLE) FIRE EXTINGUISHER – A fire extinguisher capable of undergoing complete maintenance including internal inspection of cylinder, replacement of parts and seals and hydrostatic testing.

CONSTRUCTION

6 General

6.1 The construction of an extinguisher shall be such that the method of operation is obvious after observing the operating instructions.

6.2 The construction of an extinguisher shall be such that after discharge of the agent is initiated, the operator of the extinguisher is not required to take further manual actions to maintain the maximum possible flow of agent, other than holding the operating device in the fully opened position. The extinguisher shall be usable by one operator, without assistance from a second individual.

6.3 An extinguisher having a capacity of 2.3 kg (5 lb) mass or more of carbon dioxide shall stand in the upright position without support.

6.4 A material for an extinguisher part, the deterioration of which causes the extinguisher to become inoperable or results in the risk of injury to persons, shall not be susceptible to stress corrosion.

6.5 A polymeric or other nonmetallic part, other than an "O" ring or gasket, shall be evaluated on the basis of:

a) Mechanical strength, including resistance to impact, see Handle and Mounting Device Test, Clause 24; Hydrostatic Pressure Test, Clause 30; Vibration Test, Clause 33; Roadability and Rough Usage Tests, Clause 34; Nameplate Exposure Tests, Clause 42;

b) Moisture absorption; see Salt Spray Corrosion Test, Clause 39; One-Year Time Leakage Test, Clause 41, Nameplate Exposure Tests, Clause 42;

c) Flammability, see 6.6;

d) Resistance to deterioration due to aging, see Aging Tests – Polymeric Materials, Clause 37; One-Year Time Leakage Test, Clause 41; Nameplate Exposure Tests, Clause 42;

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