CAN/ULC 554:2026

Standard for Water Based Agent Fire Extinguishers

ULC Standards
Normes ULC

SCC CCN

Underwriters Laboratories of Canada (ULC) was established in 1920 by letters patent issued by the Canadian Government. It maintains and operates laboratories and certification services for the examination, testing and certification of appliances, equipment, materials, constructions and systems to determine their relation to life, fire and property hazards as well as providing inspection services.

ULC Standards develops and publishes standards and other related publications for building construction, security and burglar protection, environmental safety, electrical equipment, fire protection equipment, gas and oil equipment, thermal insulation products, materials and systems, energy use in the built environment and electrical utility safety.

ULC Standards is a not-for-profit organization and is accredited by the Standards Council of Canada as a Standards Development Organization.

National Standards of Canada developed by ULC Standards conform to the criteria and procedures established by the Standards Council of Canada. Such standards are prepared using the consensus principle by individuals who provide a balanced representation of interests relevant to the subject area on a national basis.

National Standard of Canada

A National Standard of Canada is a standard developed by a Standards Council of Canada (SCC) accredited Standards Development Organization, in compliance with requirements and guidance set out by SCC. More information on National Standards of Canada can be found at www.scc.ca.

SCC is a Crown corporation within the portfolio of Innovation, Science and Economic Development (ISED) Canada. With the goal of enhancing Canada's economic competitiveness and social well-being, SCC leads and facilitates the development and use of national and international standards. SCC also coordinates Canadian participation in standards development, and identifies strategies to advance Canadian standardization efforts.

Accreditation services are provided by SCC to various customers, including product certifiers, testing laboratories, and standards development organizations. A list of SCC programs and accredited bodies is publicly available at www.scc.ca.

For further information on ULC standards, please contact:

ULC STANDARDS
Telephone: 1-888-853-3503
E-mail: ClientService@shopULStandards.com

To purchase ULC Standards, visit: https://www.shopulstandards.com

The intended primary application of this standard is stated in its scope. It is important to note that it remains the responsibility of the user of the standard to judge its suitability for the particular application.

Copies of this National Standard of Canada may be ordered from ULC Standards.

CETTE NORME NATIONALE DU CANADA EST DISPONIBLE EN VERSIONS FRANÇAISE ET ANGLAISE

Standard for Water Based Agent Fire Extinguishers, CAN/ULC 554

Third Edition, Dated November 25, 2016

Summary of Topics

This revision of CAN/ULC 554 dated January 29, 2026 includes revisions to packing and shipping requirements; Section 64 (deleted), Section 64A (new), and Annex B.

Text that has been changed in any manner or impacted by ULSE's electronic publishing system is marked with a vertical line in the margin.

The new requirements are substantially in accordance with Proposal(s) on this subject dated October 10, 2025.

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

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

ULC Standards
Normes ULC

ULC Standards
CAN/ULC 554:2026
Third Edition

ULSE Inc.
ANSI/UL 8
Seventh Edition

Standard for Water Based Agent Fire Extinguishers

November 25, 2016

(Title Page Reprinted: January 29, 2026)

This harmonized standard has been jointly revised on January 29, 2026 to reflect updates to the standard.

Approved American National Standard
ANSI

ANSI/UL 8-2025

NATIONAL STANDARD OF CANADA
STANDARDS COUNCIL OF CANADA
CONSEIL CANADIEN DES NORMES
NORME NATIONALE DU CANADA

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

Commitment for Amendments

ISSN 0317-526X **© 2026 ULC Standards**

All rights reserved. No part of this publication may be reproduced in any form whatsoever without the prior permission of the publisher.

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 Collaborative Standards Development System (CSDS) at https://csds.ul.com.

© 2026 ULSE Inc.

Our Standards for Safety are copyrighted by ULSE Inc. Neither a printed nor electronic copy of a Standard should be altered in any way. All of our Standards and all copyrights, ownerships, and rights regarding those Standards shall remain the sole and exclusive property of ULSE Inc.

This ANSI/UL Standard for Safety consists of the Seventh Edition including revisions through January 29, 2026.

The most recent designation of ANSI/UL 8 as an American National Standard (ANSI) occurred on January 29, 2026. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface.

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

For information on ULSE Standards, visit https://www.shopulstandards.com, call toll free 1-888-853- 3503 or email us at ClientService@shopULStandards.com.

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

ULC Preamble

International Classification for Standards (ICS): 13.220.10

This Standard has been developed in compliance with the requirements of the 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.

The Third Edition of this ULC Standard was based on, and superseded, the Second Edition.

This CAN/ULC 554 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.

This Standard is intended to be used for conformity assessment.

ULC STANDARDS COMMITTEE ON PORTABLE FIRE EXTINGUISHERS

Name	Affiliation	Category	Region
L. Bourgeois	Tritop Inc	Supply Chain	Canada
G. Ferris	Protection R.T Inc.	Producer	Canada
A. Guo	Yuji America Corp.	Supply Chain	USA
D. Haithcock	UL Standards & Engagement	Non-Voting Member	USA
B. Levitt	Levitt-Safety Ltd.	Commercial / Industrial User	Canada
C. McLean	Midland Fire Department	Authorities Having Jurisdiction / Regulator	Ontario
G. Meek	Penhold Fire Department	Authorities Having Jurisdiction / Regulator	Alberta
J.R. Nerat	National Presto Industries Inc.	Producer	USA
K. Pate	Amerex Corporation	Producer	USA
D. Pelton	National Association of Fire Equipment Distributors (NAFED)	Supply Chain	USA
G. Schultz	City of Toronto	Authorities Having Jurisdiction / Regulator	Ontario
I. Shearer	Strike First Corporation	Producer	Canada
B. Shugarman	UL Solutions	Testing & Standards Org.	USA
D. Tiller	Office of the Fire Marshal	Authorities Having Jurisdiction / Regulator	Ontario
G. Vestergom Jr.	Unifoam Company Ltd.	Producer	Canada
N. Weeks	UL Standards & Engagement	Project Manager (Non-Voting)	USA

This list represents the membership at the time the Committee balloted on the final text of this edition. Since that time, changes in the membership may have occurred.

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

CONTENTS

ULC Preamble....5

Preface....11

INTRODUCTION

1 Scope....13
2 Units of Measurement....13
3 Reference Publications....13
4 Components....13
5 Glossary....13

CONSTRUCTION

6 General....15
7 Cylinders....16
8 Joints....16
9 Caps, Valves, Closures, and Pressure Relief....16
10 Gaskets and “O” rings....17
11 Gas Cartridges, Cylinders, and Regulators....17
12 Pressure Gauges and Indicators....18
13 Puncturing Mechanisms....19
14 Tamper Indicators and Locking Devices....19
15 Hose....19
16 Couplings....20
17 Nozzles and Discharge Valves....20
18 Siphon Tubes....20
19 Strainers....20
20 Handles and Mounting Devices....20
21 Hose Retainers – Wheeled Extinguishers....21
22 Running Gear – Wheeled Extinguishers....21
23 Expellant Gases....21
24 Antioverfill tubes....21
25 Extinguishing Agent....22

PERFORMANCE

26 General....22
27 Fire Tests....22
28 Tamper Indicator and Locking Device Test....22
28.1 Tamper Indicator....22
28.2 Locking Device and Tamper Indicator....22
29 Handle and Mounting Device Test....23
30 Operation Test....23
31 Discharge Duration Test....23
32 Rate of Flow Test....24
33 Discharge Range Test....24
34 Intermittent Discharge Test....24
35 Operating Temperature Limits Test....25
36 Temperature Cycling Test....25
37 30-Day Elevated Temperature Test....25
38 High-Temperature Exposure Test....25

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

39 Abnormal Operation Test 25
40 Hydrostatic Pressure Test 26
40.1 Cylinders....26
40.2 Discharge valves, caps, and closures....27
40.3 Hose assemblies 27
40.4 Gas cartridges....27
40.5 Test method 27
41 Vibration Test....28
41.1 General....28
41.2 Mounting of test sample 28
41.3 Test orientation....29
41.4 Variable frequency test....29
41.5 Endurance test 29
42 Roadability and Rough Usage Tests 29
42.1 Roadability....29
42.2 Rough usage....30
42.3 Rough usage – operation 30
43 Siphon Tube Attachment Test – Polymeric Materials 30
43.1 General....30
43.2 Press-fit type siphon tube assemblies....31
43.3 Threaded siphon tube assemblies....31
44 Aging Tests – Polymeric Materials 31
44.1 General....31
44.2 Exposure to extinguishing agent test 32
44.3 Light and water test....32
45 Elastomeric Parts Test 33
46 Salt Spray Corrosion Test....34
47 10-Day Moist Ammonia Air Stress Cracking Test 35
48 Agent Exposure Test 35
48.1 Disposable (nonrechargeable) fire extinguishers....35
48.2 Rechargeable (refillable) fire extinguishers 36
49 Servicing Tests....36
50 One-Year Time Leakage Test 36
51 Calibration Test – Gauges and Indicators 37
52 Burst Strength Test – Gauges and Indicators....37
53 Water Resistance Test – Gauges and Indicators 37
54 Leakage Test – Gauges and Indicators 38
55 Cycling Test – Pressure Indicators....38
56 Vibration Test – Pressure Gauges and Indicators....38
57 Overpressure Test – Gauges....38
58 Impulse Test – Gauges 38
59 Pressure Gauge Relief Test....39
60 Nameplate Exposure Tests 39
61 Nameplate Adhesion Test 39
62 Nameplate Abrasion Test....40
63 Antioverfill Tube Test 40

PACKAGING

64 General 40
64A General....40

MANUFACTURING AND PRODUCTION TESTS

65 General 41

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

66 Hydrostatic Pressure Test 41
66.1 Cylinders 41
66.2 Non-DOT or Non-TDGR gas cartridges 41
66.3 Hoses and couplings 42
67 Two-Year Leakage Test 42

MARKING

68 General 42
69 Operating Instructions 43
70 Use Code Symbols 44
71 Recharging instructions 45
72 Identification of Contents 45
73 Inspection Instructions 45

RECORD TAGS AND MANUALS

74 Record Tag 46
75 Manuals 46

TABLES

FIGURES

ANNEX A Reference Standards

ANNEX B French translations of required markings

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

Preface

This is the harmonized ULSE and ULC Standard for Water Based Agent Fire Extinguishers. It is the Third edition of CAN/ULC 554, and the Seventh edition of ANSI/UL 8.

This harmonized Standard was prepared by UL Standards & Engagement Inc. (ULSE), ULC Standards and the Extinguisher Technical Harmonization Committee.

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

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.

Annexes A and B are identified as normative, forms mandatory parts 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 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 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.

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.

INTRODUCTION

1 Scope

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

1.2 The requirements for performance during fire testing of water based agent 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 the applicable standard, 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.

ULSE INC. COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM ULSE INC.