ULC Standards
Normes ULC

JOINT CANADA-UNITED STATES
NATIONAL STANDARD

ANSI/CAN/UL/ULC 2162:2025

STANDARD FOR SAFETY

Commercial and/or Outdoor Wood-Fired Baking Ovens – Refractory Type

Approved American National Standard
ANSI
ANSI/UL 2162-2025

scc ccn

SCC FOREWORD

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.

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

UL Standard for Safety for Commercial and/or Outdoor Wood-Fired Baking Ovens – Refractory Type, ANSI/CAN/UL/ULC 2162

Second Edition, Dated March 13, 2025

Summary of Topics

This new Second edition of ANSI/CAN/UL/ULC 2162 dated March 13, 2025 incorporates editorial changes including renumbering and reformatting to align with current style.

The new requirements are substantially in accordance with Proposal(s) on this subject dated August 2, 2024.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise without prior permission of ULSE Inc. (ULSE).

ULSE provides this Standard "as is" without warranty of any kind, either expressed or implied, including but not limited to, the implied warranties of merchantability or fitness for any purpose.

In no event will ULSE be liable for any special, incidental, consequential, indirect or similar damages, including loss of profits, lost savings, loss of data, or any other damages arising out of the use of or the inability to use this Standard, even if ULSE or an authorized ULSE representative has been advised of the possibility of such damage. In no event shall ULSE's liability for any damage ever exceed the price paid for this Standard, regardless of the form of the claim.

Users of the electronic versions of UL's Standards for Safety agree to defend, indemnify, and hold ULSE harmless from and against any loss, expense, liability, damage, claim, or judgment (including reasonable attorney's fees) resulting from any error or deviation introduced while purchaser is storing an electronic Standard on the purchaser's computer system.

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

ANSI/UL 2162-2025

MARCH 13, 2025

1

ANSI/CAN/UL/ULC 2162:2025

Standard for Commercial and/or Outdoor Wood-Fired Baking Ovens – Refractory Type

Prior to the first edition, the requirements for the products covered by this Standard were included in the Outline of Investigation for Commercial Wood-Fired Baking Ovens – Refractory Type, UL 2162.

First Edition – May, 2014

Second Edition

March 13, 2025

This ANSI/CAN/UL/ULC Safety Standard consists of the Second Edition.

The most recent designation of ANSI/UL 2162 as an American National Standard (ANSI) occurred on March 13, 2025. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, Preface or SCC Foreword.

This Standard has been designated as a National Standard of Canada (NSC) on March 13, 2025.

© 2025 ULSE Inc. All rights reserved.

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

CONTENTS

Preface 5

INTRODUCTION

1 Scope 7
2 Components 8
3 Units of Measurement 8
4 Referenced Publications 8
5 Glossary 9
6 Terminology 10

CONSTRUCTION

7 Materials 10
8 Assembly 11
9 Joints 12
10 Support Assembly 12
11 Ventilation Openings 13

PERFORMANCE

12 General 13
13 Test Installations 14
13.1 General 14
13.2 Enclosure 14
13.3 Exhaust hood 14
13.4 Direct connect venting systems 15
13.5 Wood storage 16
14 Temperature Measurement 16
15 Fire Tests 21
16 Rapid Fire Test 26
17 Normal Operation Fire Test 27
18 Abnormal Operation Fire Test 27
19 Flame Spillage Fire Test 28
20 Glazing Test 28
20.1 General 28
20.2 Impact test 28
20.3 Water shock test 29
21 Thermal Conductivity Test 30
22 Refractory Material Strength Test 30
23 Fire Chamber Strength Test 31
24 Strength Test – Chimney Connector 32

OUTDOOR WOOD-FIRED BAKING OVENS

25 Performance 34
25.1 General 34
25.2 Hot and cold conditioning test 34
25.3 Freezing and thawing tests for refractory materials 37
25.4 Wind test 38
25.5 Stability tests 38

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

MARKINGS

26 General 39
27 Marking Permanence Tests 40
27.1 General 40
27.2 Air oven – aging test 41
27.3 Humidity test 41
27.4 Unusual condition exposure test 41

INSTRUCTIONS

28 Installation and Operating Instructions 41
28.1 General 41
28.2 Installation instructions 42
28.3 Operating instructions 43

Annex A – Safety Marking Translations (Normative for Canada and Informative for the US)

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

Preface

This is the Second Edition of ANSI/CAN/UL/ULC 2162, Standard for Commercial and/or Outdoor Wood-Fired Baking Ovens – Refractory Type.

ULSE is accredited by the American National Standards Institute (ANSI) and the Standards Council of Canada (SCC) as a Standards Development Organization (SDO). ULC Standards is accredited by the Standards Council of Canada (SCC) as a Standards Development Organization (SDO).

This Standard has been developed in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization.

This ANSI/CAN/UL/ULC 2162 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.

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.

This Second Edition joint American National Standard and National Standard of Canada is based on, and now supersedes, the first Edition of UL 2162.

Requests for interpretation of this Standard should be sent to ULC Standards. The requests should be worded in such a manner as to permit a "yes" or "no" answer based on the literal text of the requirement concerned.

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.

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 Edition of the Standard has been formally approved by the Technical Committee (TC) on Solid Fuel Appliances, TC 127.

This list represents the TC 127 membership when the final text in this Standard was balloted. Since that time, changes in the membership may have occurred.

TC 127 Membership

Name	Representing	Interest Category	Region
E. Adair	Hearth Patio & Barbecue Association	Producer	USA
J. Brania	UL Solutions	Testing & Standards Org.	USA
I. Brodzinski	UL Standards & Engagement	TC Project Manager – Non-voting	USA
J. Buckley	Buckley Rumford CO	Supply Chain	USA

TC 127 Membership Continued on Next Page

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

TC 127 Membership Continued

Name	Representing	Interest Category	Region
G. Bures	Bures Consultants, Inc.	General Interest	USA
K. Bush	Office of the Maryland State Fire Marshal	Authorities Having Jurisdiction	USA
L. Curley	Chimney Safety Institute of America	General Interest	USA
N. Dawe	County Of Cobb	Authorities Having Jurisdiction	USA
E. Dufour	Security Chimneys International LTD	Producer	Canada
D. Feb	FIRE Associates	General Interest	USA
B. Ferrari	National Chimney Sweep Guild	Commercial / Industrial User	USA
D. Freeman	Freeman Fire Inspectors, Ltd.	Commercial / Industrial User	USA
Z. Gadomski	WETBC	Commercial / Industrial User	Canada
K. Kalakay	State of Michigan	Authorities Having Jurisdiction	USA
S. LeBlanc	SBI-International	Producer	Canada
T. Mcnulty	US Draft CO	Producer	USA
C. Neufeld	Blaze King Industries Inc	Producer	USA
K. Reasoner	Kozy Heat Fireplaces	Producer	USA
M. Romanow	Innovative Hearth Technologies	Producer	USA
M. Savage	Marion County, FL	Authorities Having Jurisdiction	USA
B. Schwock	New Buck Corporation	Producer	USA
P. Stegmeir	P B S & Associates	Commercial / Industrial User	USA
J. Steinert	PFS TECO	Testing & Standards Org.	USA
A. Tiegs	OMNI-Test Laboratories, Inc.	Testing & Standards Org.	USA
J. Voorhees	United States Stove Company	Producer	USA
L. Werner	UL Standards & Engagement	TC Chair – Non-voting	Canada
B. Ziegler	Intertek Testing Services	Testing & Standards Org.	USA

International Classification for Standards (ICS): 97.040.20

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

This Standard is intended to be used for conformity assessment.

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 this particular application.

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

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

INTRODUCTION

1 Scope

1.1 These requirements apply to commercial and/or outdoor wood-fired ovens. Commercial wood-fired ovens are intended for use by commercial establishments for the purpose of cooking or baking food products utilizing solid wood fuel. These ovens utilize refractory materials as the liner of the oven cavity.

1.2 For the purposes of this Standard, the ovens described in 1.1 that are installed in commercial establishments are vented by an exhaust hood or by means of a direct connect venting system.

a) Exhaust hoods are covered by the Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, NFPA 96, or an exhaust hood tested for compliance with the requirements in the Standard for Exhaust Hoods for Commercial Cooking Equipment, UL 710, or the Standard for Exhaust Hoods and Related Controls for Commercial and Industrial Kitchens, ULC 646.

Minimum exhaust hood size including minimum height, depth, and length of the hood as well as minimum hood overhangs, minimum exhaust air flows, and maximum hood height above the oven shall be established as part of the investigation, as well as the temperature rating of the hood.

b) Direct connect venting systems are covered by the Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, NFPA 96, or a direct connect venting system tested for compliance with the requirements of Standard for Factory-Built Chimneys for Residential Type and Building Heating Appliances, UL 103 and Standard for Grease Ducts, UL 1978, or 540 °C and 760 °C Industrial Chimneys, ULC/ORD-C959 and Standard for Exhaust Cleaning and Standard for Factory Built Grease Ducts, ULC S662.

1.3 The wood-fired baking ovens as covered by these requirements and the exhaust hoods referenced in these requirements are intended for installation in accordance with:

a) In Canada:

1) CSA C22.1, Canadian Electrical Code, Part 1 (CE Code);

2) CSA B365, Installation Code for Solid-Fuel-Burning Appliances and Equipment;

3) National Building Code of Canada (NBC);

4) National Fire Code of Canada (NFC);

5) Regulation of the authority having jurisdiction.

b) In the United States:

1) NFPA 70, National Electrical Code (NEC);

2) International Mechanical Code (IMC);

3) Uniform Mechanical Code;

4) NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations;

5) Other applicable Federal and State regulations for the specific product or application it is being utilized in.

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

2 Components

2.1 A component of a product covered by this Standard shall:

a) Comply with the requirements for that component as specified in this Standard;

b) Be used in accordance with its rating(s) established for the intended conditions of use; and

c) Be used within its established use limitations or conditions of acceptability.

2.2 A component of a product covered by this Standard is not required to comply with a specific component requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product; or

b) Is separately evaluated when forming part of another component, provided the component is used within its established ratings and limitations.

2.3 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.

2.4 A component that is also intended to perform other functions such as overcurrent protection, ground-fault circuit-interruption, surge suppression, any other similar functions, or any combination thereof, shall comply additionally with the requirements of the applicable standard(s) that cover devices that provide those functions.

3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

3.2 Unless otherwise indicated, all voltage and current values mentioned in this Standard are root-mean-square (rms).

4 Referenced Publications

4.1 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.

4.2 The following publications are referenced in this Standard:

ASME B36.10M, *Welded and Seamless Wrought Steel Pipe*

ASTM E136, *Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 °C*

ASTM E2652, *Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750 °C*

CSA 22.2 No. 0.15, *Adhesive Labels*

CSA 22.2 No. 25, *Temperature-Indicating and Regulating Equipment*

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

CSA B365, *Installation Code for Solid-Fuel-Burning Appliances and Equipment*

CSA C22.1, *Canadian Electrical Code, Part 1 (CE Code)*

International Mechanical Code (IMC)

National Building Code of Canada (NBC)

National Fire Code of Canada (NFC)

NFPA 70, *National Electrical Code (NEC)*

NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*

UL 103, *Factory-Built Chimneys for Residential Type and Building Heating Appliances*

UL 710, *Exhaust Hoods for Commercial Cooking Equipment*

UL 723, *Test for Surface Burning Characteristics of Building Materials*

UL 969, *Marking and Labeling Systems*

UL 1978, *Grease Ducts*

UL 60730-1, *Automatic Electrical Controls – Part 1: General Requirements*

UL 60730-2-9, *Automatic Electrical Controls For Household and Similar Use; Part 2: Particular Requirements For Temperature Sensing Controls*

ULC/ORD-C959, *540 °C and 760 °C Industrial Chimneys*

ULC 102, *Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies*

ULC 114, *Standard Method of Test for Determination of Non-Combustibility in Building Materials*

ULC 646, *Exhaust Hoods for Commercial Cooking Equipment*

ULC S662, *Factory-Built Grease Ducts*

Uniform Mechanical Code

5 Glossary

5.1 For the purpose of this Standard the following definitions apply.

5.2 AUTHORITY HAVING JURISDICTION (AHJ) – The governmental body responsible for the enforcement of any part of this Standard or the official or agency designated by that body to exercise such a function.

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