CAN/ULC-S635:2016 (R2022)

STANDARD FOR LINING SYSTEMS FOR EXISTING MASONRY OR FACTORY-BUILT CHIMNEYS AND VENTS

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Standard for Lining Systems for Existing Masonry or Factory Built Chimneys and Vents, CAN/ULC-S635

Third Edition, Dated August 1, 2016

Summary of Topics

This revision of CAN/ULC-S635 dated April 7, 2022 is being issued to update the title page to reflect the reaffirmation of this Third Edition National Standard of Canada. No changes in requirements are involved.

The requirements are substantially in accordance with Proposal(s) on this subject dated September 24, 2021.

PLEASE NOTE THAT CERTAIN CODES MAY REFER TO A SUPERSEDED VERSION OF THIS STANDARD.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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CAN/ULC-S635:2016 (R2022)

STANDARD FOR LINING SYSTEMS FOR EXISTING MASONRY OR FACTORY-BUILT CHIMNEYS AND VENTS

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CONTENTS

ULC STANDARDS COMMITTEE ON FACTORY-BUILT FIREPLACES, CHIMNEYS AND VENTS.....7

PREFACE 9

1 SCOPE 11
2 REFERENCE PUBLICATIONS 11
3 GLOSSARY.....11
4 COMPLIANCE.....13

PART A

5 MATERIALS 13
6 ASSEMBLY 13
6.1 GENERAL 13
6.2 INSULATION.....14
6.3 CHIMNEY TERMINATION ASSEMBLIES 15
6.4 JOINTS 15
6.5 TEE SECTIONS AND SUPPORT ASSEMBLIES FOR METALLIC LINING SYSTEMS 16
7 INSTALLATION AND MAINTENANCE INSTRUCTIONS.....16
8 PERFORMANCE.....19
8.1 GENERAL 19
8.2 TEST INSTALLATION.....20
8.3 TEMPERATURE RISE.....21
9 PERFORMANCE TESTS 21
9.1 TEST NO. 1 – CONDENSING SULPHUR DIOXIDE (METAL LINERS ONLY) 21
9.2 TEST NO. 2 – SUPPORT.....21
9.3 TEST NO. 3 – PULL TEST 22
9.4 TEST NO. 4 – PUNCTURE 22
9.5 TEST NO. 5 – TORSION (FOR METAL LINERS).....22
9.6 TEST NO. 6 – LIQUID PENETRATION 23
9.7 TEST NO. 7 – DRAFT LOSS.....23
9.8 TEST NO. 8 – RAIN.....23
9.9 TEST NO. 9 – RESISTANCE TO ACTION OF ACIDS OF NONMETALLIC LINERS 24
9.10 TEST NO. 10 – FREEZING AND THAWING OF NONMETALLIC LINERS 24
9.11 TEST NO. 11 – CRUSHING OF NONMETALLIC LINERS 25
9.12 TEST NO. 12 – LOADING TEST FOR METALLIC LINERS (RIGID ONLY) 25
9.13 TEST NO. 13 – ABRASION.....25
9.14 TEST NO. 14 – STRENGTH TEST FOR METALLIC CHIMNEY LINERS.....26
10 PERFORMANCE (FLEXIBLE LINERS ONLY).....26
10.1 TEST NO. 15 – FLEXIBILITY.....26
10.2 TEST NO. 16 – STRENGTH.....26
10.3 TEST NO. 16A – BEND (FLEXIBLE LINERS UP TO 200 mm DIAMETER) 26
11 TEMPERATURE MEASUREMENT.....27

PART B

12 COMPLIANCE.....27
13 MATERIALS 27
14 PERFORMANCE 27
14.1 TEST NO. 17 – TEMPERATURE – 245 °C FLUE GASES.....27
15 MARKING 28

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PART C

16 COMPLIANCE 29
17 MATERIALS 29
18 PERFORMANCE 29
18.1 TEST NO. 18 – TEMPERATURE – 300 °C FLUE GASES 29
18.2 TEST NO. 19 – TEMPERATURE – 925 °C FLUE GASES 29
18.3 TEST NO. 20 – RESISTANCE TO BRUSH SWEEPING 30
19 MARKING 30

PART D

20 COMPLIANCE 31
21 MATERIALS 31
22 PERFORMANCE 31
22.1 TEST NO. 21 – DRAFT 31
22.2 TEST NO. 22 – THERMAL SHOCK 31
22.3 TEST NO. 23 – WATER SHOCK (IF NO RAIN CAP PROVIDED) – NONMETALLIC LINERS ONLY 32
22.4 TEST NO. 24 – TEMPERATURE – 650 °C FLUE GASES 32
22.5 TEST NO. 25 – TEMPERATURE – 925 °C FLUE GASES 33
22.6 TEST NO. 26 – TEMPERATURE – CREOSOTE BURNOUT 33
22.7 TEST NO. 27 – RESISTANCE TO BRUSH SWEEPING 34
23 MARKING 34
TABLES 35
FIGURES 37

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PREFACE

This is the Third Edition of the Standard for Lining Systems for Existing Masonry or Factory Built Chimneys and Vents, CAN/ULC-S635.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Factory-Built Fireplaces, Chimneys and Vents.

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

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.

This Third Edition National Standard of Canada was based on, and superseded, the Second Edition of ULC-S635.

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

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.

This CAN/ULC-S635 Standard is under continuous maintenance, whereby each revision is approved in compliance with the requirements of 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.

This Standard is intended to be used for conformity assessment.

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1 SCOPE

1.1 This Standard covers *lining systems* for existing *masonry chimneys*, which may or may not incorporate a *liner* of fire-clay tile, and existing factory built *chimneys* and vents.

1.2 *Lining systems* shall be classed as follows:

Class 1 – For the venting of gas-fired *appliances* where the temperature of the *flue-gas* products is 135 °C or above, but does not exceed 245 °C;

Class 2 – For the venting of oil and gas-fired *appliances* where the temperature of the *flue-gas* products does not normally exceed 300 °C; and

Class 3 – For the venting of oil-, gas- and solid-fuel fired *appliances* where the temperature of the *flue-gas* products does not normally exceed 650 °C.

1.3 *Lining systems* as covered by these requirements, are not intended for use with Type BH Gas Vents, or with *appliances* that create positive pressures within the *lining system*, or cause condensation of corrosive acids, unless specifically listed for such applications.

2 REFERENCE PUBLICATIONS

2.1 The documents shown below are referenced in the text of this Standard. Unless otherwise stated elsewhere in this Standard such reference shall be considered to indicate the edition and/or revisions of the document available at the date on which the Committee approved this ULC Standard.

Documents Published by the American Society for Testing and Materials (ASTM International)
100 Barr Harbour Drive, PO Box C700, West Conshohocken, PA 19428-2959 U.S.A.
Telephone: (610) 832-9585
www.astm.org

• ANSI/ASTM A653/A653M-15, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot Dip Process

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Documents Published by ULC Standards (prior to May, 2010, identified as Underwriters Laboratories of Canada)
171 Nepean Street, Suite 400, Ottawa, ON K2P 0B4 Canada
Telephone: (416) 757-3611, ext. 61744; Fax (613) 231-5977, “ATTN: Publications”
E-mail: publications@ulc.ca
www.ulc.ca

• CAN/ULC-S114-05, Standard Method of Test for Determination of Non Combustibility in Building Materials

3 GLOSSARY

Note: Terms used in this Standard that are in *italic* print are defined as follows:

3.1 *APPLIANCE* – A device to convert the energy in fuel into heat, and includes all accessories, components, controls, wiring, piping or tubing required to be part of the device.

3.2 *BREECHING* – A *flue* pipe or chamber for receiving *flue gases* from one or more *flue* connections and for discharging these gases through a single *flue* connection.

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3.3 *CHIMNEY* – A primarily vertical shaft enclosing at least one *flue* for conducting *flue gases* to the outdoor atmosphere.

3.4 *CHIMNEY CONNECTOR* – The *flue* pipe that connects a fuel burning *appliance* to a *lining system*.

3.5 *CHIMNEY, MASONRY OR CONCRETE* – A field constructed *chimney* of brick, stone, concrete or masonry units built in accordance with applicable building code requirements.

3.6 *CHIMNEY TOP FLASHING* – A flashing to close off the space between the *lining system* and the top of the existing *chimney*.

3.7 *FIRE STOP* – A draft tight barrier within or between construction assemblies that acts to retard the passage of smoke and flame.

3.8 *FLUE* – An enclosed passageway for conveying *flue gases*.

3.9 *FLUE COLLAR* – The portion of a fuel-fired *appliance* designed for the attachment of the *flue* pipe or *breeching*.

3.10 *FLUE GASES* – Combustion products and excess air.

3.11 *LINER* – The *flue* gas conveying section of a *chimney lining system*.

3.12 *LINING SYSTEM* – A system that is constructed from metallic or nonmetallic materials that are factory made or packaged by the manufacturer to be mixed in the field, and that is assembled in the field to form a complete, functional means for conveying products of combustion to the outside, within an existing *chimney*.

3.13 *NATURAL DRAFT* – The draft created by an *appliance* that operates at neutral or negative pressure, as measured at the outlet of the appliance.

3.14 *NON-COMBUSTIBLE* – Material conforming to CAN/ULC-S114, Standard Method of Test for Determination of Non-Combustibility in Building Materials.

3.15 *QUALIFIED PERSON* – A person who has successfully completed a thorough training programme recognized by the *regulatory authority* and who is familiar with the use of the product and the risks associated with improper installation procedures.

3.16 *RAIN CAP* – A cover to prevent the entrance of debris or rain into the *liner*.

3.17 *REGULATORY AUTHORITY* – A Federal, Provincial or Municipal Ministry, Department, Board, Agency, or Commission that has responsibility for regulating by statute the use of products, materials, or services.

3.18 *SMOKE CHAMBER* – The part of the system which connects the fireplace to the *chimney* and allows a channelling of the *flue gases* to occur.

3.19 *SPARK ARRESTOR* – A device to prevent sparks, embers or other ignited material, above a given size, from being expelled to the atmosphere.

3.20 *SPARK SCREEN* – A device to prevent sparks, embers or other ignited material, above a given size, from being expelled onto the roof.

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3.21 *WALL PENETRATION ASSEMBLY* – A means for routing a *chimney connector* through a combustible wall to a masonry *chimney*.

4 COMPLIANCE

4.1 *Lining systems* as covered by this Standard, shall be capable of installation in existing masonry or factory-built *chimneys* and vents in accordance with the manufacturer's installation instructions as required herein.

4.2 Class 1 *lining systems* intended for venting gas-fired *appliances* shall meet the requirements of Parts A and B of this Standard.

4.3 Class 2 *lining systems* intended for venting oil and gas-fired *appliances* shall meet the requirements of Parts A and C of this Standard.

4.4 Class 3 *lining systems* intended for venting oil-, gas- and solid-fuel fired *appliances* shall meet the requirements of Parts A and D of this Standard.

PART A

5 MATERIALS

5.1 Materials employed for the conduit of *lining systems* shall be *non-combustible* and capable of meeting the test requirements described herein for the appropriate class of *lining system*. Materials shall not be used in combinations at any location within the *lining system* that may cause detrimental galvanic action.

5.2 Materials shall be as specified in Parts B, C and D, as applicable.

5.3 Thermal insulation, if used, shall comply with the following conditions when the *lining system* is tested in accordance with these requirements:

A Shall be *non-combustible*;

B Shall be compressible;

C The K factor shall not change by more than 20 %;

D Shall not cause deterioration of the *lining system*; and

E Shall not soften or melt.

6 ASSEMBLY

6.1 GENERAL

6.1.1 A *chimney lining system* shall consist of all the parts and materials necessary for its intended assembly of a complete *chimney lining system*. Each part of the system shall be constructed for ready attachment of one to the other without requiring alteration by the installer, such as by cutting, threading, drilling, welding, or similar tasks.

Exception No. 1: An assembly or component part intended to be cut to length or to be fitted by the installer may be provided if means are furnished for joining any altered part to a companion part or assembly. All fasteners required to complete the assembly shall be provided with the product by the manufacturer.

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