CAN/ULC 103:2016 (R2026)

Standard Specification for “Tin-Clad” Fire Doors Meeting the Performance Required by CAN/ULC 104

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 Specification for “Tin-Clad” Fire Doors Meeting the Performance Required by CAN/ULC 104, CAN/ULC 103

Fourth Edition, Dated February 1, 2016

Summary of Topics

This reaffirmation of CAN/ULC 103 dated May 20, 2026 is being issued to update the title page to reflect the reaffirmation of this Fourth Edition National Standard of Canada. No changes in requirements are involved.

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 requirements are substantially in accordance with Proposal(s) on this subject dated March 6, 2026.

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.

No Text on This Page

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

Standard Specification for "Tin-Clad" Fire Doors Meeting the Performance Required by CAN/ULC 104

ICS 13.220.50; 91.060.50

First Edition . . . . . March 1978
Second Edition . . . . . April 1983
Third Edition . . . . . June 2009
FOURTH EDITION . . . . . FEBRUARY 1, 2016
Reaffirmed . . . . . November 4, 2020
REAFFIRMED . . . . . MAY 20, 2026

© 2026

ULC Standards

All rights reserved. No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without prior permission.

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

No Text on This Page

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

CONTENTS

ULC STANDARDS COMMITTEE ON FIRE TESTS 7

PREFACE 9

1 SCOPE 11
2 REFERENCE PUBLICATIONS 11
3 MATERIALS 12
3.1 LUMBER 12
3.2 METAL COVERING 14
4 CONSTRUCTION 15
4.1 ASSEMBLY OF BOARDS 15
4.2 NAILING OF CORES 15
4.3 FINISHED CORE 17
4.4 SIZE OF PLATES 17
4.5 FORMING OF PLATES 17
4.6 APPLICATION OF PLATES 18
4.7 NAILING OF PLATES 19
4.8 PROTECTION OF NAIL HEADS 19
4.9 ASTRAGAL 20
4.10 REINFORCEMENT FOR GLASS GROOVES 20
4.11 GLASS GROOVES CONSTRUCTED OF ANGLES 20
4.12 GLASS GROOVES CONSTRUCTED OF FORMED SHEET METAL 20
4.13 MUNTINS 21
4.14 SCREWS AND RIVETS 21
4.15 GLASS SIZES 21
4.16 SPLICING OF DOORS MADE IN SECTIONS 22
4.17 WICKETS 22
4.18 APPLIED METALS 22
5 MARKING 22
TABLES 23
FIGURES 24

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

No Text on This Page

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

ULC STANDARDS COMMITTEE ON FIRE TESTS

NAME	AFFILIATION	CATEGORY	REGION
S. Craft (Chair)	CHM Fire Consultants Ltd.	General Interest	Canada
M. Acheson	City of Edmonton	Authorities Having Jurisdiction	Alberta
E. Banks	e.w. banks consulting llc	General Interest	USA
B. Banting	Canada Masonry Design Centre	Producer	Canada
M. Birk	Queen's University	Non voting	Canada
R. Bruggeman	USG Corp	Producer	USA
B. Cheer	Ontario Building Officials Association	Authorities Having Jurisdiction	Ontario
J. Chisholm	Toronto Fire Services	Authorities Having Jurisdiction	Ontario
G. Chu	Chemistry Industry Association of Canada / Spray Polyurethane Foam Producers & Applicators	Producer	Canada
T. Crimi	A C Consulting Solutions Inc.	General Interest	Canada
J. Current	Ministry of Solicitor General	Government	Ontario
C. Dagenais	FPInnovations	Commercial / Industrial User	Canada
E. Dahan	Department of National Defence / Government of Canada	Non voting	Canada
P. Darley	Miami Beach Fire Department	Authorities Having Jurisdiction	USA
C. Diercks	James Hardie Building Products, Inc.	Producer	USA
I. El-Hajj	DS Consultants Ltd.	General Interest	Canada
D. Esposito	Jensen Hughes	General Interest	Canada
D. Falconer	Falconer Engineering & Testing	General Interest	Canada
R. Ghandour	UL Standards & Engagement	TC Project Manager – Non voting	Canada
A. Gilders	UL Standards & Engagement	Non voting	Canada
M. Gilfillan	Matteo Gilfillan & Associates Inc.	General Interest	Canada
E. Goldhammer	Hilti Inc.	Producer	USA
L. Hamre	Professional Loss Control INC	General Interest	Canada
L. Henke	PTW	Producer	Canada
T. Jukes	Wheatland County Fire Services	Authorities Having Jurisdiction	Alberta
L. Kearns	Standards Individuals	Non voting	Canada
K. Kooner	Intertek	Testing & Standards Org.	Canada
M. Lansdowne	QAI Laboratories Ltd.	Testing & Standards Org.	Canada
A. Laroche	National Research Council Canada	Government	Canada

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

NAME	AFFILIATION	CATEGORY	REGION
H. Locke	Locke & Locke INC	Non voting	Canada
T. Mattox	Specified Technologies INC	Producer	USA
M. McClure	ThermoFire Systems INC	General Interest	Canada
B. Mchugh	THE MCHUGH COMPANY (TMC)	General Interest	USA
R. McPhee	Canadian Wood Council	Producer	Canada
A. Nanji	Standards Individuals	General Interest	Canada
C. Palumbo	Capital Testing and Certification Services	Testing & Standards Org.	USA
G. Peck	Standards Individuals	General Interest	New Zealand
J. Roberts	Standards Individuals	General Interest	Canada
S. Salem	Lakehead University	General Interest	Canada
D. Seale	Home Innovation Research Labs	Testing & Standards Org.	USA
D. Sloan	UL Solutions	Testing & Standards Org.	USA
I. Smith	Element Materials Technology	Commercial / Industrial User	Canada
E. Sopeju	Standards Individuals	Non voting	Canada
L. Uku	Ministry of Municipal Affairs and Housing	Government	Canada
M. Van Geyn	Canadian Steel Door Manufacturers Association	Producer	Canada
B. Weckman	University of Waterloo	Non voting	Canada
F. Wiesner	University of British Columbia	General Interest	Canada

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.

PREFACE

This is the Fourth Edition of the Standard Specification for “Tin-Clad” Fire Doors Meeting the Performance Required by CAN/ULC 104, CAN/ULC 103.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Fire Tests.

The terminology “Tin Clad” applied to this type of fire door is not intended to imply a requirement for one of the materials from which the door is constructed but rather, refers to a form of construction, which has been employed for many years and by which this type of door is readily identified in the building construction industry.

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 Fourth Edition National Standard of Canada is based on, and now supersedes, the Third Edition.

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.

This CAN/ULC 103 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 Collaborative Standards Development System (CSDS) at https://csds.ul.com.

This Standard is intended to be used for conformity assessment.

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

No Text on This Page

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

1 SCOPE

1.1 These requirements cover the design and construction of "tin-clad" fire doors which have demonstrated in fire tests, fire performance properties sufficient to warrant their use in closure assemblies having a fire-protection rating of up to and including 3 h, when tested in accordance with CAN/ULC 104, Standard Method for Fire Tests of Door Assemblies.

1.2 A door conforming to these specifications consists essentially of a core made up of layers of boards nailed to each other, encased in terne or zinc plates jointed together at their edges and nailed through the seams to the core.

1.3 The sizes and ratings for three-ply and two-ply doors, constructed in accordance with these specifications, are given in TABLE 1. These ratings are designed to enable regulatory bodies to determine the suitability of the door assemblies described in this Standard for use in locations where a fire resistance of a specified duration is required. Requirements for the details of the installation of "tin-clad" fire doors, including the requirements for vent holes, are included in NFPA 80, Standard for Fire Doors and Other Opening Protectives.

1.4 TABLE 1 pertains only to the maximum size of the opening. Doors limited in size by this table fall into two categories:

A Swinging doors intended to be installed within an opening; and

B All sliding doors and those swinging doors intended for surface mounting outside of the opening.

Swinging doors in the first category are limited in size to the maximum dimensions specified for the opening. Doors in the second category must be larger than the maximum opening dimensions to provide the minimum 100 mm lap at each side and at the top of the door as required by NFPA 80, Standard for Fire Doors and Other Opening Protectives.

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

• ASTM A90/A90M-13, Standard Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings

• ASTM A308/A308M-10, Standard Specification for Steel Sheet, Terne (Lead-Tin Alloy) Coated by the Hot-Dip Process

• ASTM A309-01 (R2012), Standard Test Method for Weight and Composition of Coating on Terne Sheet by the Triple-Spot Test

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

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

Document Published by the National Fire Protection Association (NFPA)
1 Batterymarch Park, Quincy, MA 02169-7471 U.S.A.
Telephone: (617) 770-3000; Fax: (617) 770-0700
www.nfpa.org

• NFPA 80-2016, Standard for Fire Doors and Other Opening Protectives

---

Document Published by the National Lumber Grades Authority
Suite 105, 13401 108th Ave., Surrey, BC V3T 5T3 Canada
Telephone: (604) 584-2393; Fax: (604) 584-2890
www.nlga.org

• Standard Grading Rules for Canadian Lumber (January 2014)

Document Published by ULC Standards
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 104-15, Standard Method for Fire Tests of Door Assemblies

3 MATERIALS

3.1 LUMBER

3.1.1 The following soft woods may be used, provided only one kind of lumber is used in the assembly of a single core:

Cedars – All Classes	Northern White Pine	Sitka Spruce
Cypress – All Classes	Red Wood	Yellow Poplar
Douglas Fir	Eastern Spruce	Tupelo Gum
Western White Pine		

3.1.2 Lumber shall have a moisture content of 19 % or less at the time of manufacturing door cores.

3.1.3 The boards shall be surfaced on two sides, tongued and grooved, and without beading or bevelling, painting, or other treatment.

3.1.4 The actual thickness of the boards shall be 19 mm with a tolerance of + 3 or - 0 mm.

3.1.5 Boards shall be not less than 89 mm and not more than 184 mm in width.

3.1.6 The boards shall be free from wane (bark), decay, knot or other holes, loose knots, unsound knots, or knots exceeding 63 mm in any dimension.

3.1.7 Boards No. 2 Common Grade or better will generally meet these requirements. The kind of lumber used and its condition shall be judged from characteristic properties of the wood as commonly known. These characteristics include:

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