CAN/ULC-S115:2023

STANDARD METHOD OF FIRE TESTS OF FIRESTOP SYSTEMS

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Standard Method of Fire Tests of Firestop Systems, CAN/ULC-S115

Fifth Edition, Dated June 26, 2018

Summary of Topics

This revision of CAN/ULC-S115 dated July 19, 2023 includes aligning 9.4.3.1 with ASTM-E2307.

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 revised requirements are substantially in accordance with Proposal(s) on this subject dated February 24, 2023.

PLEASE NOTE THAT CERTAIN CODES MAY REFER TO A SUPERSEDED VERSION OF THIS STANDARD.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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STANDARD METHOD OF FIRE TESTS OF FIRESTOP SYSTEMS

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PREFACE

This is the Fifth Edition of the Standard Method of Fire Tests of Firestop Systems, CAN/ULC-S115.

This Edition of the Standard was developed by the ULC Standards Task Group on Firestop Systems and has been formally approved by the ULC Standards Committee on Fire Tests.

This Standard has been developed in compliance with the requirements of the Standards Council of Canada (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.

Appendix A, identified as Informative, is for information purposes only.

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.

The Fifth Edition of this National Standard of Canada is based on, and now supersedes, the Fourth 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.

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-S115 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.

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1 SCOPE

1.1 This method of test is applicable to firestop systems with or without penetrating items such as cables, cable trays, conduits, ducts and pipes. These firestop systems are intended for use in openings in fire resistive wall and floor assemblies and membranes forming part of an assembly required to have a fire resistance rating and linear openings between adjacent fire resistive floor assemblies, wall assemblies or both.

1.2 Tests conducted in conformance with this method will record firestop performance during the fire-test exposure under laboratory conditions; but such tests shall not be construed as determining suitability of the firestop system for use after exposure to fire.

1.3 The test method allows for the testing of the resistance of firestop systems to an external force simulated by a hose stream. However, this method shall not be construed as determining the performance of the firestop systems during actual fire conditions when subjected to forces such as failure of cable support systems and falling debris.

1.4 Provisions are included to allow for testing with a pressure differential between the furnace chamber and the exterior.

1.5 It is the intent that tests made in conformity with these test methods will develop data to enable regulatory bodies to determine the suitability of firestop systems for use in assemblies where fire resistance of a specified duration is required.

1.6 Provisions are included to allow for optional air leakage testing to determine the air leakage rate through test specimens resulting from a specified air pressure difference applied across the surface of the test specimens. The results of this test are intended to develop data to assist in determining the acceptability of firestop systems with reference to the control of air movement.

NOTE: Tests for air leakage are performed under laboratory conditions. In actual usage, results may vary because of installation and/or environmental conditions. See Appendix A, Subsection A6.

1.7 For the purpose of this Standard, a firestop system (fire stop) refers to a specific construction consisting of:

A Any device intended to close off an opening or penetration during a fire;

B Material(s) that fill an opening in a wall or floor assembly where penetration is by cables, cable trays, conduits, ducts and pipes along with their means of support through the wall or floor opening;

C Material(s) that fill an opening in a wall assembly where penetration is by electrical and non-electrical outlet boxes along with their means of support in the wall assembly;

NOTE: Examples of non-electrical outlet boxes are for the supply and waste water to/from washing machines, the air exhaust from dryers, gas outlet boxes, or other devices that create an opening in the assembly.

D Material(s) and construction intended for use in linear openings between adjacent fire resistive structures.

1.8 This test method is also applicable to perimeter joint firestop systems located between a fire resistance rated floor and a rated or non-fire resistance rated exterior wall.

2 SIGNIFICANCE AND USE

2.1 This test method shall be used to determine the performance of a firestop system with respect to a standard time-temperature fire exposure during which a pressure differential may be maintained between

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the furnace chamber and the exterior. It may also be used to determine performance with respect to a standard hose stream test.

2.2 Five ratings may be established for each firestop system (F, FT, FH, FTH and L).

F rating is based upon flame occurrence on the unexposed surface.

FT rating is based upon a temperature rise criterion and flame occurrence on the unexposed surface.

FH rating is based upon flame occurrence on the unexposed surface and satisfactory performance during the hose stream test.

FTH rating is based upon a temperature rise criterion, flame occurrence on the unexposed surface and satisfactory performance during the hose stream test.

L rating is based upon the volume of air flowing, per unit of time, through the openings around the test specimen under a specified pressure difference.

The rating of a firestop system applies to its use in the specific assembly of materials, penetrations and floors or walls in which it was tested.

2.3 The firestop systems are intended for use in accordance with provincial or municipal building regulations that are based on the National Building Code of Canada.

3 REFERENCE PUBLICATIONS

3.1 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 E1399/E1399M-97 (Reapproved 2017), Standard Test Method for Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems

• ASTM E2307-15, Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus

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• CSA C22.1-15, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations

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• National Building Code of Canada, 2015

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• CAN/ULC-S101-14, Standard Methods of Fire Endurance Tests of Building Construction and Materials

4 GLOSSARY

NOTE: Terms used in this Standard are defined as follows:

FIELD SPLICE – the technique utilized at the point of installation to join two or more lengths of a joint firestop system or its component material.

FIRESTOP SYSTEM(S) (FIRE STOP) – a system consisting of a material, component and means of support used to fill gaps between fire separations or between fire separations and other assemblies, or used around items that wholly or partially penetrate a fire separation. (Refer to Clause 1.7)

FIRESTOP SYSTEM COMPONENT – a component that has been tested as a part of a firestop system.

NOTE: The components of a firestop system include the firestop material, as well as any penetrating items, and their means of support and the surrounding wall or floor.

JOINT FIRESTOP SYSTEM – a firestop system that provides a seal along a continuous linear opening between two fire-resistance rated assemblies, or bounded by a fire-resistance rated assembly, to prevent the spread of fire.

NOTE: Closed, or “blank” penetrations, intended to accommodate future or abandoned penetrations for example, are not considered to be joints for the purposes of this Standard.

MANUFACTURED SPLICE – the technique utilized at the point of manufacture to join two or more lengths of a joint firestop system material.

MAXIMUM JOINT WIDTH – the greatest width to which the joint firestop system is designed to extend, taking into consideration all axes of movement.

MINIMUM JOINT WIDTH – the narrowest width to which the joint firestop system is designed to accommodate.

MOVEMENT CAPABILITY – the range of movement that a joint firestop system is designed to accommodate without diminishing its fire resistive performance.

MOVEMENT CYCLE – the continual repetitious movement between the minimum and maximum joint width positions.

NOTE: The initial position is the nominal joint width and the three movement cycle positions are the maximum joint width, minimum joint width and the nominal joint width.

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