



CAN/ULC-S1001-11-R2018 (Reaffirmed 2018)

STANDARD FOR INTEGRATED SYSTEMS TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS



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Standard for Integrated Systems Testing of Fire Protection and Life Safety Systems,
CAN/ULC-S1001-11-R2018

First Edition, Dated September 2011

Summary of Topics

This revision of CAN/ULC-S1001 is being issued to update the title page to reflect the reaffirmation of this First Edition National Standard of Canada. No changes in requirements are involved.

The revised requirements are substantially in accordance with Proposal(s) on this subject dated March 13, 2017.

PLEASE NOTE THAT CERTAIN CODES MAY REFER TO A SUPERSEDED VERSION OF THIS STANDARD.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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ICS 13.220.20; 13.320; 19.020



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STANDARD FOR INTEGRATED SYSTEMS TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS

PREFACE

This is the First Edition of the Standard for Integrated Systems Testing of Fire Protection and Life Safety Systems, CAN/ULC-S1001.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Fire Alarm and Life Safety Equipment and Systems.

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

The requirements of this Standard contemplate that the integrated systems testing procedures described herein will be conducted by an organization other than the installing contractor.

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.

Appendices A and B, identified as informative, are for informational purposes only.

In Canada, there are two official languages, French and English. Attention is drawn to the fact that some Canadian authorities may require markings and/or instructions to be in either or both official languages, except as may be stated elsewhere in this Standard.

This First Edition National Standard of Canada has now been reaffirmed.

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-S1001 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.

1. SCOPE

1.1 This Standard prescribes the methodology for verifying and documenting that all *interconnections* between systems provided for fire protection and life safety functions are installed and operating in conformance with their *design criteria*. Refer to Appendix A1.1.

1.2 This Standard is intended to satisfy the requirement for integrated systems testing in the National Building Code of Canada and the National Fire Code of Canada.

1.3 It is not the intent of this Standard that integrated systems testing ensure individual *fire protection and life safety systems* are functioning and installed in accordance with their *design criteria* or referenced Standards.

1.4 This Standard prescribes the following:

- A Integrated Systems Testing Qualifications;
- B Integrated Systems Testing Process;
- C Integrated Systems Testing Requirements;
- D Integrated Systems Testing Documentation;
- E Periodic Integrated Systems Testing;
- F Retro-Integrated Systems Testing; and
- G Integrated Systems Testing for Modifications.

2. REFERENCE PUBLICATIONS

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. All undated references shall be interpreted as referring to the latest edition of that document.

Standards Published by CSA Standards
5060 Spectrum Way, Mississauga, ON L4W 5N6 Canada
Telephone: (416) 747-4000 or 1-800-469-6727
www.csa.ca

- CSA C22.1-09, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations
- ASME A17.1-2010/CSA B44-10, Safety Code for Elevators and Escalators
- CSA C282-09, Emergency Electrical Power Supply for Buildings

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

- NFPA 20-2010, Standard for the Installation of Stationary Pumps for Fire Protection
-

Document Published by the National Research Council of Canada (NRC)
1200 Montreal Road, Bldg. M58, Ottawa, ON, K1A 0R6, Canada
Telephone: (613) 993-2463 or 1-800-672-7990

- 2010 National Building Code of Canada
- 2010 National Fire Code of Canada

Standard Published by ULC Standards
7 Underwriters Road, Toronto, ON M1R 3A9 Canada
Telephone: (416) 757-3611 or 1-866-9373-ULC
www.ulc.ca

- CAN/ULC-S537, Verification of Fire Alarm Systems
-

3. GLOSSARY

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

ACCEPTANCE TESTING – The evaluation of a *fire protection and life safety system* to ensure that the system is installed in accordance with its *design criteria* and the relevant Standards associated with its installation.

ALTERNATIVE SOLUTION – A substituted resolution, to an acceptable solution as outlined in applicable Codes and Standards, which has been deemed acceptable by the *authority having jurisdiction*.

AUDIBLE SIGNAL DEVICE – A device to indicate by means of sound output the activation of the *fire alarm system*.

AUTHORITY HAVING JURISDICTION – The government body responsible for the enforcement of any part of this Standard or the official or agency designated by that body to exercise that function

BUILDING – Any structure used or intended for supporting or sheltering any use or *occupancy*.

COMPONENT – Individual devices, forming part of equipment, sub-systems, systems or interconnected systems.

CONTROL UNIT – A *component* that provides the control and logic processing of a *fire alarm system*.

DESIGN CRITERIA – Documents prescribed by a *design professional* for a *fire protection and life safety system* to meet the requirements of the *owner* and applicable Codes and Standards.

DESIGN PROFESSIONAL – A person, firm or corporation, qualified in accordance with federal, provincial, territorial, or other applicable regulations responsible for the design of an integrated *fire protection and/or life safety system*.

EMERGENCY GENERATOR – Equipment for the local generation of electrical energy for supplying a load requiring emergency electrical power when the normal power supply fails.

EMERGENCY PRESSURIZATION SYSTEM – A type of *smoke control system* in which an area or shaft is pressurized to prevent smoke from contaminating the pressurized area.

FIRE ALARM SYSTEM – A combination of devices consisting of at least a *control unit*, a *manual station* and an *audible signal device*, designed to warn the *building* occupants of an emergency fire condition.

FIRE ALARM TRANSMISSION SIGNAL – A signal indicating that a fire emergency exists.

FIRE DETECTOR – A device which detects a fire condition and automatically initiates an electrical signal to actuate an alert signal or an alarm signal and includes heat detectors and smoke detectors.

FIRE PROTECTION SYSTEM – A system designed to detect and/or react to a fire condition and:

- A Aid in the warning, protection, or evacuation of *building* occupants, or
- B Suppress or control the spread of fire and its by-products, or
- C Any combination thereof.

FIRE PROTECTION AND LIFE SAFETY SYSTEM – A system that meets the definition of a *fire protection system*, a *life safety system*, or both.

FIRE PUMP – A dedicated pump providing pressure boost and water flow for fire protection.

FIREFIGHTER'S SMOKE CONTROL STATION – A product that includes monitoring and overriding control capability over *smoke control systems* and equipment for the use of the fire department.

FIXED FIRE SUPPRESSION SYSTEM – A total flooding or local application *fire protection system* incorporating a fixed supply of extinguishing agent connected to distribution nozzles/equipment

INITIATING DEVICE – A *component* of a *fire protection system* or *life safety system* which detects a change of status condition and transmits such change.

INPUT/OUTPUT CORRELATION – The relationship between two or more *integrated fire protection and life safety systems* which has a defined cause (input) and a resultant effect (output) as specified in the system's design documentation.

INSPECTION – A visual examination to determine that the device or system will apparently perform in accordance with its intended function.

INTERCONNECTION – The link between two or more *integrated fire protection and life safety systems* which has an associated *input/output correlation*. The link between two or more *integrated fire protection and life safety systems* may or may not be a physical connection. Refer to Appendix A3.

INTEGRATED FIRE PROTECTION AND LIFE SAFETY SYSTEMS – A combination of two or more *fire protection* and *life safety systems*, which may or may not be physically connected with one another, but that are designed to operate together to achieve an overall fire protection and life safety objective.

INTEGRATED TESTING COORDINATOR – The person, firm, corporation, or organization responsible for the development and implementation of the *integrated testing plan*. Where a firm, corporation, or organization is responsible for *integrated fire protection and life safety systems testing*, a representative of that firm, corporation, or organization shall be designated as the *integrated testing coordinator*.

INTEGRATED TESTING PLAN – A written project specific document, prepared by the *integrated testing coordinator*, outlining the required tests and necessary functional results to conduct *integrated fire protection and life safety systems testing*.