

Information Bulletin

Implementation of CAN/ULC-S1001

Standard for Integrated Systems Testing of Fire Protection and Life Safety Systems

The enforcement of the 2024 Manitoba Building Code (MBC) on January 1, 2024 includes the requirement for integrated systems testing of fire protection and life safety systems in accordance with CAN/ULC-S1001. The integrated systems test will replace the City's life safety test procedure. There are additional prescriptive requirements that affect both industry and City staff. The following is intended to provide guidance on how the City will administer the standard.

MBC Subsection 3.2.9. Integrated Fire Protection and Life Safety Systems

3.2.9.1. Testing

1) Where fire protection and life safety systems and systems with fire protection and life safety functions are integrated with each other, they shall be tested as a whole in accordance with CAN/ULC-S1001, Standard for Integrated Systems Testing of Fire Protection and Life Safety Systems, to verify that they have been properly integrated. (See Note A-3.2.9.1.(1).)

Appendix in the MBC

A-3.2.9.1.(1) Testing of Fire Protection and Life Safety Systems

Building owners should verify that fire protection and life safety systems and their components (i.e. fire alarm systems, sprinklers, standpipes, smoke control, ventilation, pressurization, door hold-open devices, elevator recalls, smoke and fire shutters and dampers, emergency power, emergency lighting, fire pumps, generators, etc.), including their interconnections with other building systems, are functioning according to the intent of their design. CAN/ULC-S1001, "Standard for Integrated Systems Testing of Fire Protection and Life Safety Systems," provides the methodology for verifying and documenting that interconnections between building systems satisfy the intent of their design and that the systems function as intended by the Code.

Clause 6.1.5 of CAN/ULC-S1001 allows the Integrated Testing Coordinator to accept documented evidence of any tests that have been performed on a system as part of its acceptance testing for the purpose of demonstrating compliance with the integrated testing requirements of that standard, so as to avoid duplication of work.

Integrated Systems Testing in Buildings

As required by the 2024 Manitoba Building Code (2020 National Building Code of Canada with Manitoba amendments, adopted via Regulation 78/2023) and CAN/ULC-S1001, integrated systems testing is required when integrated fire protection and/or life safety systems are constructed or altered.

CAN/ULC-S1001 definition

Integrated Fire Protection 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.

Examples from CAN/ULC-S1001 of fire protection and life safety systems that require integrated testing:

- Fire alarm systems (e.g. audibility, visible signals, receipt of signals)
- Mass notification systems
- Elevators (e.g. proper recall)
- Emergency generators (e.g. startup test, loss of power simulations)
- Audio/visual and lighting control systems
- Notification systems
- Sprinkler systems
- Standpipe systems
- Fire pumps (e.g. startup test, loss of power simulations)
- Water supplies (test responses to pressure sensors, level sensors, etc.)
- Water supply control valves
- Freeze protection systems
- Fixed fire suppression systems (release of suppression agent not required)
- Cooking equipment fire suppression systems (release of agent not required)
- Hold-open devices (each door tested to ensure returns to closed and latched position)
- Electromagnetic locks (each must de-energize)
- Smoke control systems
- Emergency pressurization systems
- Smoke exhaust systems
- Hazardous protection monitoring
- Smoke alarms

An *integrated testing coordinator* is responsible to develop and implement the *Integrated Testing Plan* and submission of an *Integrated Testing Report*.

CAN/ULC-S1001 definitions

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.

Integrated Testing Report — A written project specific document, prepared by the *integrated testing coordinator*, documenting the implementation of the *integrated testing plan*.

Integrated Test Coordinator

An *integrated testing coordinator* shall be:

- a design professional skilled in the area of work concerned (i.e. the design, installation, and operation of fire protection and life safety systems, and the fire protection and life safety functions of building systems) or,
- has been assessed and qualified as an Integrated Systems Testing Service Provider with “ULC Certified Integrated Systems.”

“Design professional” means a professional engineer or architect who is qualified to sign and seal plans, drawings and other documents submitted as part of an application for a permit under [Winnipeg Building By-law 4555/87](#), Subsection 5.1.

CAN/ULC-S1001 states:

4.2.1 The *integrated testing coordinator* shall be knowledgeable and experienced in the design, installation, and operation of fire protection and life safety system(s), and the *fire protection and life safety* functions of building systems. Refer to Appendix A4.2.1.

4.2.2 The *integrated testing coordinator* shall have knowledge and understanding of:

- A. The Codes and Standards that regulate the design and installation of *fire protection and life safety* system(s);
- B. How individual and integrated *fire protection and life safety* system(s) are designed to operate during normal operating conditions and emergency conditions; and
- C. Methods for validating the intended functionality of integrated *fire protection and life safety* system(s).

4.2.3 The *integrated testing coordinator* shall have all licenses and certifications if required by:

- A. Federal, provincial, territorial or other applicable regulations; and/or
- B. Contractual obligations.

Integrated systems testing must be performed by a separate independent entity from that which is providing the fire alarm verification services for the same building in accordance with CAN/ULC-S537.

Submission of an Integrated Testing Plan

An *Integrated Testing Plan* shall be submitted for review in the following buildings:

- Buildings with the scope of MBC Subsection 3.2.6. (i.e. high buildings)
- Buildings of special design (e.g. with significant life/fire safety system implications that may include smoke control systems, sprinklers, fire alarms, alternative solutions, interconnected floor spaces)
- Group B, Division 1 and 2 buildings
- Buildings specified above, where alterations affect existing life safety systems
- Buildings specified above, where upgrading to life safety systems occur
- When, in the opinion of the designated employee, the building design warrants

All buildings with integrated fire protection and life safety systems are required to have an *Integrated Testing Plan*. Plan submittal is only necessary for buildings listed above.

Integrated Testing Implementation Phase (replaces the City of Winnipeg Life Safety Test)

Prior to the City witnessing the *integrated testing plan* a pre-implementation phase meeting shall be arranged by the *integrated testing coordinator* for review and comment.

The pre-implementation phase meeting may proceed when the following are complete:

- Progress and final inspections for the building and related trades permits to a sufficient level to witness the *Integrated Testing Plan*
- Submission of the *Integrated Testing Plan* and all required supporting certifications, verification reports and shop drawings (shop drawings must be accepted before applicants can request occupancy)
- Design professional acceptance testing

A minimum notice of five business days is required to review the *Integrated Testing Plan*, supporting certifications and verification reports, and to schedule a pre-implementation phase meeting with Commercial Plan Examination and Inspections staff, the *integrated testing coordinator*, the design team, and contractors.

Integrated Test Report and Building Occupancy Request

Upon successful completion of the *integrated fire protection and life safety systems tests*, documentation as required in Section 7, Integrated Systems Testing Documentation, shall be:

- Provided to the building owner,
- Provided to Development and Inspections Division as a required document, and
- Maintained on site as specified in the Manitoba Fire Code

The *Integrated Testing Report* shall use the format provided in Appendix C of “CAN/ULC-S1001-11-REV2”, which is available for free viewing on the UL website (user account required). Supplemental information can be included.

An *Integrated Testing Report* does not have to be submitted to the Development and Inspections Division as a required document for buildings not listed in the “Submission of an Integrated Testing Plan” section above.

Role of the City

Application Stage

During the permit application stage, City staff will review the submitted permit documents for the following:

- to determine if CAN/ULC-S1001 applies to the project
- to identify the name and contact information of the *integrated testing coordinator*
- to identify if submission of an *integrated testing plan* and a pre-implementation phase meeting will be required.
- to identify which documents are required for the Building Occupancy Request.

Inspection Stage

During the inspection stage, the City coordinator will ensure the following:

- the appropriate documents are received and reviewed by City staff.
- If an integrated fire protection and life safety system test is required:
 - Work with the *integrated testing coordinator* to establish the pre-implementation phase meeting and *integrated fire protection and life safety system test* dates
 - Chair the pre-implementation phase meeting
 - Ensure appropriate City personnel attend the test
 - Collect and evaluate feedback from City staff immediately after the *integrated fire protection and life safety systems test* to provide observations to the *integrated testing coordinator*.
 - Failure of any system shall result in correction and re-testing, arranged between the City coordinator and *integrated testing coordinator*.

- Ensuring an *Integrated Testing Report* as required in Section 7, Integrated Systems Testing Documentation, is provided prior to a building occupancy request.

The *Integrated Testing Report* shall be required prior to a final building occupancy request. It is not a mandatory document for an interim occupancy request provided:

- A successful *integrated fire protection and life safety system test* has been completed, and
- Design professional certifications and related documents support interim occupancy.

Building Systems Testing and Maintenance

Testing and maintenance of integrated fire protection and life safety systems is required by the 2024 Manitoba Fire Code (2020 National Fire Code with Manitoba Amendments adopted via Regulation 82/2023.). CAN/ULC-S1001 provides the timelines for this ongoing testing.

Reference Materials

2024 MBC – 2024 Manitoba Building Code (2020 National Building Code of Canada with Manitoba amendments, adopted via Regulation 78/2023)

2024 MFC – 2024 Manitoba Fire Code (2020 National Fire Code with Manitoba amendments, adopted via Regulation 82/2023.)

CAN/ULC-S1001-11-REV 2 – Integrated Systems Testing of Fire Protection and Life Safety Systems

CAN/ULC-S537 – Standard for Verification of Fire Alarm Systems