



# Integrated Fire Protection and Life Safety Systems Guideline

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Effective January 1, 2020, amendments to Division B of the Ontario Building Code (OBC) Articles 3.2.10.1 and 9.10.18.10 were introduced to provide for the Integrated Systems Testing of Fire Protection and Life Safety Systems in compliance with the CAN/ULC-S1001-11 standard.

This standard directly affects testing of any combination of two or more fire protection and life safety systems which are designed to operate together and achieve an overall life safety objective, and to ensure the proper operation and integration of these systems.

The intent of this guide is to outline the information required to be submitted to the Building Services department at each stage of the project.

## **Building permit application:**

The following documentation is to be provided at permit application:

1. The name of the Integrated Testing Coordinator (ITC). This is the engineering person or engineering firm that is responsible for the development and implementation of the Integrated Testing Plan. A copy of the City's ITC verification form is to be provided.
2. A copy of the draft site-specific Integrated Testing Plan (ITP) prepared by the ITC outlining the required tests and necessary functional results to conduct integrated fire protection and life safety systems testing prior to occupancy of the building. The ITP shall consist of the following:
  - a. A site specific plan
  - b. Approved by all consultants involved with the design of the Fire systems ie: Sprinkler Engineer, Fire Alarm Engineer etc.
  - c. Provide specific requirements for testing of systems where occupancy of the building will be phased.
  - d. A list of all existing systems that are on the site and any testing that will be performed on those systems.
  - e. Provide the functional objectives of the systems integrations
  - f. The sequence of operations of the integrated fire protection and life safety systems which:
    - i. Describe operation under normal operating conditions
    - ii. Describe operation under fire conditions
  - g. Test protocol and procedures for integrated fire protection and life safety systems
  - h. A procedure for notifying building occupants of the integrated systems testing; and
  - i. Alternate measures such as notifications and safety protocols for ensuring occupant safety during integrated systems testing

## **Prior to Occupancy:**

The following documentation is to be provided prior to occupancy for new buildings, and existing projects applied for after January 1, 2020 but not yet occupied:

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1. Completed Integrated Testing Report prepared by the ITC stating the procedure and final results of the Integrated Testing Plan.
    - a. Report shall be verified by all parties including the installing contractors and the consulting engineer(s) where applicable.
    - b. Documentation shall be provided for each phase of occupancy where occupancy of the building will be phased.
    - c. Notification of testing is to be provided to the Building Inspector for witnessing of systems.
  2. Documentation to be provided as required by CAN/ULC S1001 – 5.3.1. Integrated Systems Testing Implementation Phase
  3. Conformance letter prepared by the ITC indicating that the fire protection and life safety systems have been tested successfully in accordance with CAN/ULC-S1001-11 and that the area to be occupied meets the objective of Articles 3.2.10.1. or 9.10.18.10. OBC.
  4. As per CAN/ULC S1001-11Rev1 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

### Existing Building Renovations:

1. Where only one fire protection and life safety system is modified that is not interconnected with an existing fire protection or life safety system, a new integrated testing report prepared by the ITC is not required. Any work completed on these systems will require final consultant reviews in compliance with the OBC.
2. Where there is an existing Integrated Testing Report for the property, only the affected fire protection and life safety systems need to be tested and documented in the Integrated Testing Report prepared by the ITC in compliance with CAN/ULC-S1001, Article 10.2.3.
3. Where there is not an existing Integrated Testing Report on the property, and more than one fire protection and life safety system is modified, a new Integrated Testing Plan prepared by the ITC establishing the appropriate steps to integrate the fire protection and life safety systems in compliance CAN/ULC-S1001, Article 10.2.3.

**Note: Building Services may request conformance with Articles 3.2.10.1 or 9.10.18.10 depending on the scope of work identified with the permit application which could affect the project timelines.**

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## ONTARIO BUILDING CODE

### 3.2.10. Testing of Integrated Fire Protection and Life Safety Systems

#### 3.2.10.1. Testing

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

#### OBJECTIVE

Integrated fire protection systems and life safety systems must meet their proper standards. Failure could result in the systems not performing in the way they were intended in a fire situation. This could lead to inadequate water supply to fire suppression systems or a fire not being controlled and spreading to the other parts of the building. In addition, properly functioning and integrated fire protection systems and life safety systems should avoid delays in the evacuation or movement of persons to a safe location.

The checklist provided in this document will serve as a guideline for the professional or *Integrated Testing Coordinator* to complete and submit it to the Building Inspector as part of the occupancy requirements for the building. The Certificate must be completed for all new buildings or for existing buildings where their *fire protection or life safety systems* have not undergone any initial integrated tests.

Below are applicable definitions from the CAN/ULC-S1001-11 standard for reference in the application of this guide;

*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.

*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.

*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,
- B. Suppress or control the spread of fire and its by-products, or
- C. Any combination thereof

*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 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.

*Life Safety System* – A system designed to enhance or facilitate the safety of building occupants during an emergency condition.

*Owner* – Any person, firm, corporation or organization controlling the property under consideration.

#### CAN/ULC-S1001-11 Reference

Section 4.2.1. states; the integrated testing coordinator shall be knowledgeable and experienced in the design, installation, and operation of fire protection and life safety functions of building systems.

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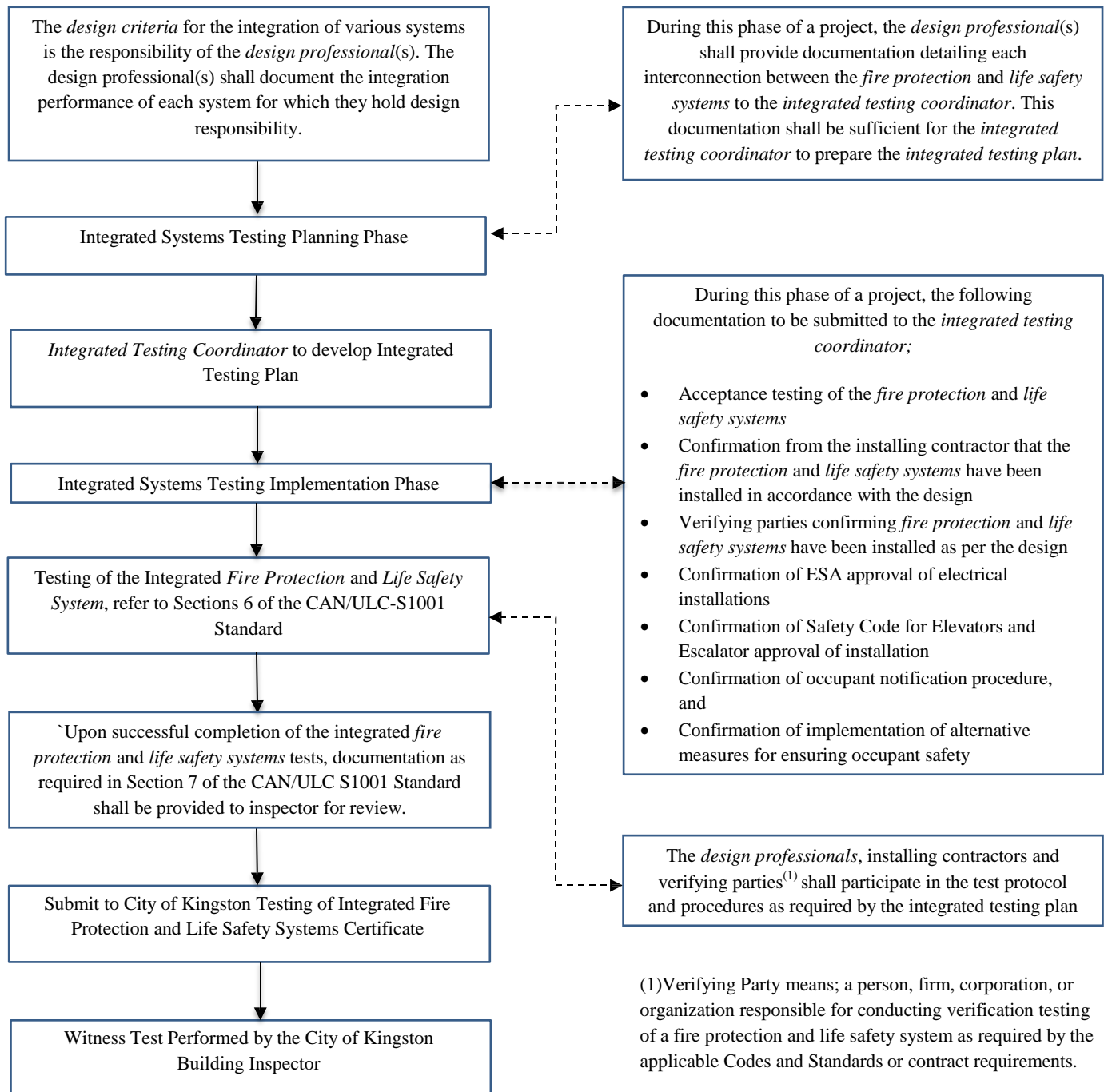


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## Integrated Systems Testing Process

(testing of new installations or retro-integrated systems or integrated systems testing modifications)



# Integrated Fire and Life Safety Systems Coordinator Verification

This verification form must be accompanied with the Draft Integrated Testing Plan. The Integrated Testing Coordinator as required by CAN/ULC S1001 shall be a person or Company Certified through UL or a P. Eng. licensed to practice in Ontario.

Permit applications will be considered incomplete if the application is not accompanied by the following information:

<b>Project Information</b>				
Building Address (Number and Street name)	Permit Application No:	Date:		
<b>Owner Information</b>				
Name of Owner:	Address:	Email:		
		Phone:		
<b>Integrated Testing Coordinator if Professional Engineer</b>				
Name of Engineering Firm:	Address:	Email:		
		Phone:		
Name of Engineer:	Signature:	Email:		
		Phone:		
<b>Integrated Testing Coordinator if UL Certified Person</b>				
Name of Company:	Address:	Email:		
		Phone:		
Coordinator Name:	UL Certification No.:	Coordinator Signature:		
<b>Fire and Life Safety Systems to be Integrated</b>				
Please check ( <input type="checkbox"/> ) Systems to be integrated as per OBC Div. B 3.2.10.1. or 9.10.18.10.:				
Fire Alarm		Sprinkler		Fixed Fire Suppression
Mass Notification		Standpipe		Electromagnetic Locking Devices
Smoke Control Pressurization		Fire Pumps		Emergency Generator
Smoke Control Exhaust		Water Supplies		Emergency Elevators
Audio/Visual and/or Lighting Control		Notification		Water Supply Control Valve
Cooking Equipment Fire Suppression		Freeze Protection		Hazardous Protection
Smoke Alarms		Dust Collection		Spark Arrest
Fire Shutters		Fire Dampers		Emergency Power
Door hold open Devices		Other:		Other:
<b>Integrated Testing Coordinator Declaration</b>				
<p>I _____ declare that:</p> <p style="text-align: center;">(print name)</p> <ol style="list-style-type: none"> <li>1. The submitted Integrate Testing Plan is in compliance with OBC Div. B 3.2.10.1, or 9.10.18.10 and CAN/ULC S1001-11</li> <li>2. The implementation of the Integrated Testing Plan, including all testing will be as per CAN/ULC S1001</li> <li>3. The engineer of record for all Fire and Life Safety Systems have been consulted as per the standard and approve the Integrated Testing Plan</li> <li>4. I confirm that the City will be contacted immediately in writing if I become disengaged from the project listed.</li> </ol> <p style="text-align: center;">_____</p> <p style="display: flex; justify-content: space-between;"> <span>Date</span> <span>Signature of Integrated Testing Coordinator</span> </p>				

# Integrated Fire and Life Safety Systems Certificate

This certificate must be provided in accordance with Section 7 of CAN/ULC S1001-11 as documentation that testing as per the Integrated Testing Plan has been completed. This form shall be completed by The Integrated Testing Coordinator as required by CAN/ULC S1001-11, and submitted to the Building Department prior to any witness tests being conducted by the City of Kingston.

<b>Project Information</b>		
Building Address (Number and Street name)	Permit Application No:	Date:

<b>Owner Information</b>		
Name of Owner:	Address:	Email:
		Phone:

<b>Integrated Testing Coordinator</b>		
Name of Company:	Address:	Email:
		Phone:
Coordinator Name:	Signature:	Email:
		Phone:

<b>Declaration</b>			
<p>The Integrated Testing Coordinator as noted above confirms that the integrated testing was performed in accordance with the integrated testing plan to ensure proper operation and inter-relationship between the systems as per the drawings prepared by the systems designer and approved for construction. The systems tested have been found to be in conformance with the Ontario Building Code 2012 as amended and CAN/ULC S1001-11 Standard to Integrated Systems Testing of Fire Protection and Life Safety Systems.</p>			

Date Testing performed:	Name of Systems Designer:	Name of Installing Contractor:	Phone:
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Please check (  ) Integrated Systems subject to testing:

Fire Alarm		Sprinkler		Fixed Fire Suppression	
Mass Notification		Standpipe		Electromagnetic Locking Devices	
Smoke Control Pressurization		Fire Pumps		Emergency Generator	
Smoke Control Exhaust		Water Supplies		Emergency Elevators	
Audio/Visual and/or Lighting Control		Notification		Water Supply Control Valve	
Cooking Equipment Fire Suppression		Freeze Protection		Hazardous Protection	
Smoke Alarms		Dust Collection		Spark Arrest	
Fire Shutters		Fire Dampers		Emergency Power	
Door Hold open Devices		Other:		Other:	

<b>Integrated Testing Coordinator Declaration</b>	
<p>I _____ declare that:</p> <p style="text-align: center;">(print name)</p> <ol style="list-style-type: none"> <li>1. Testing has been completed as per the approved Integrated Testing Plan and CAN/ULC S1001-11</li> <li>2. All systems designers/consultants have reviewed and approved the testing results</li> <li>3. All installers have participated in the testing, and as-builts provided as required</li> </ol>	
<p>_____</p> <p style="text-align: center;">Date</p>	<p>_____</p> <p style="text-align: center;">Signature of Integrated Testing Coordinator</p>