



## Fire Protection and Life Safety Systems- Integrated Systems Testing

Both the National Building Code, under Articles 3.2.9. and 9.10.1.2. and the National Fire Code under Article 2.1.3.7. refer to the requirement for commissioning of life safety and fire protection systems to ensure proper operation and integration of these systems.

### **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, "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).)

**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, "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.

Within a building there are various life safety and fire protection systems. Individually these systems must be tested and verified for operation by the applicable discipline or personnel through a process typically called "commissioning" however, for the purposes of Article 3.2.9. and 9.10.1.2., the overall system must be tested to verify the integrated operation of the system using the Integrated System Testing (IST) process. Newly installed life safety systems and alterations to existing life safety systems would require IST to verify proper integration and performance of these systems.

It is expected that the integrated testing coordinator prepare integrated testing plans for each building or facility. While formatting and layout of the integrated testing plan is not mandated by the NBC or NFC, the intent is to ensure proper operation of these integrated systems. The integrated testing plan should also include a plan that allows for future periodic integrated system testing and testing after modifications.

Guidance for applying IST is described in the "CAN/ULC S1001-11 Standard for Integrated Systems Testing of Fire Protection and Life Safety Systems".

It is expected that qualified testing firm or a registered engineering professional be retained as the Integrated Testing Coordinator (ITC).

The completed "Integrated Fire Protection and Life Safety Systems Testing Certificate" may be solely accepted as confirmation IST has been completed. Depending on the complexity of the life safety systems, the Building Official may also request a copy of the integrated testing plan and a report of the test results.



**Integrated Fire Protection and Life Safety Systems Testing Certificate**

Building Permit Number: \_\_\_\_\_ Municipal Address of Project: \_\_\_\_\_

Date of Testing: \_\_\_\_\_

The building owner shall have this form completed by the appropriate professional(s) or the Integrated Testing Coordinator and submit the form to the Building Official prior to final inspection and building occupancy.

**Scope of type of integration:** New Integrated System  or Retro or Modified Integrated System

**Copy of Integrated Testing Report Attached:** Yes  or No

Interconnection between the following integrated systems were subject to the test:

Systems Integrated	Yes	No	N/A
Fire Alarm System (Including Sequence of Operation)			
Mass Notification System			
Elevators			
Emergency Power			
Audio/Visual and /or Lighting Control Systems			
Notification Systems			
Sprinkler and Standpipe Systems			
Fire Pumps			
Water Supplies			
Water Supply Control valves			
Freeze Protection Devices			
Fixed Fire Suppression Systems			
Cooking Equipment Fire Suppression Systems			
Electromagnetic Locking Devices/Door Hold-Open Devices			
Fire Shutters			
Smoke Control Pressurization Systems			
Smoke Control Exhaust Systems			
Hazardous Protection Monitoring			
Smoke Alarms			
Dust Collection Systems			
Spark Arrest System			
Other:			
Other:			

If the answer is "No" to any of the above, please provide an explanation. N/A means the system is not within the building.

The undersigned hereby confirms the above systems function according to the intent of their design and that the fire protection and life safety functions of these systems have been tested as a whole in accordance with CAN/ULC-S1001-11 to verify the systems are properly integrated as per Article 3.2.9.1.(1) of the National Building Code.

\_\_\_\_\_  
 Name of Testing Company or Professional Engineer  
 Performing the Integration Testing  
 Rev 12/09/20

\_\_\_\_\_  
 Signature of Coordinator

\_\_\_\_\_  
 Print Signatory's Name