



BUILDING BULLETIN

Building Services

Subject: Verification of Fire Alarm Systems
Building Bulletin No: BD.BB.18.10
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Reference: s. 1.1(6) *Building Code Act*

A. Purpose

The intent of this Building Bulletin is to clarify the acceptable criteria for the verification of Fire Alarm Systems and to clarify individuals who should be completing the testing and verification of those systems regulated under the Ontario Building Code.

B. Background and Definitions

Ontario Building Code References

3.2.4.5. Installation and Verification of Fire Alarm Systems

(1) Fire alarm systems, including those with voice communication capability, shall be installed in conformance with CAN/ULC-S524, "Installation of Fire Alarm Systems".

(2) A fire alarm system shall be verified in conformance with CAN/ULC-S537, "Verification of Fire Alarm Systems", to ensure satisfactory operation.

CAN/ULC-S537 References

The preface of the CAN/ULC Standard contemplates that the verification procedure described herein will be conducted by an organization other than the installing contractor and designer, and that the verification will be carried out by qualified personnel in the employ of an organization acceptable to the authority having jurisdiction.

C. General Interpretation and Requirements

C.1. Verification Certificates

CAN/ULC-S537 and all of the NFPA standards that cover fire suppression systems contain requirements for performing testing and/or verification of the systems after installation is complete and before the systems are put into operation.

1. The Building Services Division is the Authority Having Jurisdiction (AHJ) and to confirm that the testing and verification of the fire alarm and/or fire suppression system has been performed according to the relevant standards, the person or company responsible for the verification shall provide documentation to the Chief Building Official in the form set out in Appendix A and B of this Building Bulletin.

The documentation provided should contain the following information:

- the name of the person or company performing the test or verification,
 - the name of the building owner or designer/design engineer for whom the test or verification is being done,
 - the name of the designer,
 - the name of the contractor who installed the system,
 - the name of the contractor who updated the drawings and specifications to 'as-built' status,
 - the address of the building where the system is installed,
 - the date of installation of the system,
 - the date on which the system was tested or verified,
 - the codes and standards to which the system was tested or verified, the signature of the person responsible for the verification, and
 - the professional's seal if required (see items 2 and 3 below).
2. In addition to the requirements listed above and set out in Appendices A and B, the various NFPA standards and CAN/ULC-S537 contain document templates for reporting on the testing and verification of fire alarm and fire suppression systems.

3. For buildings that are required by Article 1.2.2. of Division C to be designed and to have construction reviewed by Architects **and/or** Professional Engineers, the following conditions shall be met:
 - a) the verification of the fire alarm system and the required documentation of that verification must be completed under the direction of a Professional Engineer who, through training and experience, is familiar with the installation and functional requirements of fire alarm systems; and
 - b) once the verification of the fire alarm system is complete, **the Certificate of Verification (see Appendix A) is to be sealed by the Professional Engineer assuming responsibility for the verification.**

4. For buildings that are **not** required by Article 1.2.2. of Division C to be designed and to have construction reviewed by Architects or Professional Engineers, the following conditions shall be met:
 - a) the verification of the fire alarm system and the required documentation of that verification should be completed under the direction of
 - i. the person responsible for the design and/or construction review who, through training and experience, is familiar with the installation and functional requirements of fire alarm systems, or
 - ii. an independent third party who, through training and experience, is familiar with the installation and functional requirements of fire alarm systems; and
 - b) once the verification of the fire alarm system is complete, **the Certificate of Verification (see Appendix A) should be signed by the person assuming responsibility for the verification,**

C.2. Existing Fire Alarm Systems

When an existing Fire Alarm System (FAS) in a building is subjected to an addition or alteration (replacement of components, addition, modification, repair, adjustment to system hardware, or any change to software), then the extent of the Fire Alarm System re-verification shall be provided as follows:

1. When a control unit, CACF or an annunciator has been replaced, repaired or modified on the existing FAS the entire FAS shall be re-verified.
2. When a component or components of the existing single zone fire alarm system have been subjected to an addition or modification the entire FAS shall be re-verified.

3. When fire alarm initiating devices have been added or modified in a fire alarm initiating zone (a manual station, a smoke detector, a flow switch or a heat detector), then that entire fire alarm initiating zone shall be re-verified. (See Notes).
4. When audible signal devices have been added or modified in a fire alarm signaling zone (speakers, bells, vibrating gongs, etc.) then that entire fire alarm signaling zone shall be re-verified. (See Notes).
5. When an existing fire alarm system component (a field device, voice communication module, a control unit, annunciator, etc.) has been modified or replaced with a component from a different manufacturer, all existing and new/modified devices must be compatible. The requirement of Clause 3.1.4 of the Standard ULC S524 states that "All devices incorporated in a fire alarm system shall be compatible".
 - a. Therefore, such compatibility shall be indicated on the Appendix C form by providing a compatibility test report from the ULC. The referenced test report must accompany each completed Appendix C form submitted in accordance with this Building Bulletin.

Notes:

1. Section 6 of ULC S537, "System Modification", provides specific verification requirements for modified fire alarm systems.

Clause 6.2 of ULC S537 offers a clarification for modified "conventional field devices" by indicating that where a conventional field device is added or modifications are made to an existing input circuit or output circuit and the wiring is extended from an existing field device, the new device(s) as well as the existing device(s) connected on either side of the added or modified device and the end of the line for that circuit shall be verified for correct operation.

For the purpose of items 3 and 4 of this Building Bulletin, provision of Clause 6.2. of ULC S537 is deemed to be acceptable to the Chief Building Official, when only *a minor modification* is made to an existing fire alarm initiating or signaling zone (i.e., replacement, relocation or addition of not more than 10% of conventional field devices in the zone).

2. Conventional field device is defined by ULC S537 as follows:

"Conventional Field Device – A field device that is usually connected to the control unit on a common wiring circuit with other devices on the circuit provide common status change information (e.g. Fire alarm detection or signaling). Such devices cannot be

uniquely identified by the control unit unless there is only one device on the circuit.
(Refer to active field devices.)”

D. Reference Information

The Ontario Building Code

E. Attached

N/A

F. Review Cycle

This building bulletin will be reviewed annually by the Chief Building Official.

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