

FIRE ALARM AND FIRE SUPPRESSION SYSTEM VERIFICATION AND TESTING CERTIFICATES

DISCUSSION

This STANDATA has been developed to give municipalities and agencies some guidance regarding the requirement for fire alarm and fire suppression systems to be tested after installation and who should be doing the testing and verification.

The Alberta Building Code 2006 directs that fire alarm and fire suppression systems are to be tested or verified after installation. However, there is no guidance as to how the person or company performing the verification is to inform the authority having jurisdiction (AHJ) about the results of the tests.

This interpretation applies to all fire suppression systems that are installed in buildings, including, but not limited to:

1. fire suppression systems for entire buildings or floor areas within buildings,
2. fire suppression systems protecting commercial cooking ventilation systems, and
3. fire suppression systems protecting spray rooms, spray booths and spray areas for flammable and combustible material spray operations.

CODE REFERENCES

FIRE ALARM SYSTEMS

1. Sentence 3.2.4.5.(2) states:

2) Fire alarm systems shall be verified in conformance with CAN/ULC-S537, "Verification of Fire Alarm Systems," to ensure they are operating satisfactorily.

2. Sentence 2.4.2.4.(1) of Division C states:

1) If a fire alarm system is to be installed in a *building* described in Sentence 2.4.2.1.(3) or (4), the *owner* shall submit evidence to the *authority having jurisdiction*, before construction begins, that they have retained a *professional*

Unless stated otherwise, all Code references in this STANDATA are to Division B of the Alberta Building Code 2006.



Issue of this STANDATA is authorized by
the Chief Building Administrator

[Original Signed]
Ata R. Khan, MRAIC



SAFETY CODES COUNCIL

engineer to

- a) design the system,
- b) perform *field reviews* of the system during installation, and
- c) perform verification of the system after installation.

ULC STANDARD

1. The preface to CAN/ULC-S537, "Verification of Fire Alarm Systems" states:

The requirements of this 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.

The preface to the ULC standard states that the installing contractor and the designer should not be involved in the verification of the system. The Alberta Building Code is more specific in this area. Where professional involvement is required for all aspects of the building, the design engineer will be involved in both the design and verification of the system, as specified in Sentence 2.4.2.4.(1) of Division C. Only in those buildings where professional involvement is not required for the entire building would the statement in the preface of the standard be applicable.

FIRE SUPPRESSION SYSTEMS

1. Sentence 3.2.5.13.(1) to (2) states:

1) Except as permitted by Sentences (2), (3) and (4), an automatic sprinkler system shall be designed, constructed, installed and tested in conformance with NFPA 13, "Installation of Sprinkler Systems." (See Appendix A.)

2) Instead of the requirements of Sentence (1), NFPA 13R, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height," is permitted to be used for the design, construction, installation and testing of an automatic sprinkler system installed in a *building of residential occupancy* throughout, not more than 4 *storeys* in *building height* conforming to Article 3.2.2.42., Article 3.2.2.43., Article 3.2.2.45. or Article 3.2.2.48.

2. Sentence 2.4.2.3.(1) of Division C states:

1) If an automatic fire suppression system is to be installed in a *building* described in Sentence 2.4.2.1.(3) or (4), the *owner* shall submit evidence to the *authority having jurisdiction*, before construction begins, that they have retained a *professional engineer to*

- a) design the system,
- b) perform *field reviews* of the system during installation, and
- c) witness the testing of the system after installation.

NFPA Standards

1. Article 10.2.6 of NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations" states:

10.2.6 Automatic fire-extinguishing systems shall be installed in accordance with the terms of their listing, the manufacturer's instructions, and the following standards where applicable.

- (1) NFPA 12
- (2) NFPA 13
- (3) NFPA 17
- (4) NFPA 17A.

2. Article 9.1.1 of NFPA 33, "Spray Application Using Flammable or Combustible Materials" states:

9.1.1 The automatic fire protection system shall be permitted to be, and shall be installed in accordance with, any of the following:

- (1) An automatic water sprinkler system that meets all applicable requirements of NFPA 13, Standard for the Installation of Sprinkler Systems
- (2) An automatic foam water sprinkler system that meets all applicable requirements of NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems
- (3) A carbon dioxide extinguishing system that meets all applicable requirements of NFPA 12, Standard on Carbon Dioxide Extinguishing Systems
- (4) A dry chemical extinguishing system that meets all applicable requirements of NFPA 17, Standard for Dry Chemical Extinguishing Systems
- (5) A gaseous agent extinguishing system that meets all applicable requirements of NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems

INTERPRETATION

1. 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.

In order to satisfy the AHJ 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 should provide documentation to the AHJ in the form set out in Appendix A and B of this STANDATA. The documentation provided should contain the following information:

- a. the name of the person or company performing the test or verification,
- b. the name of the building owner or designer/design engineer for whom the test or verification is being done,
- c. the name of the designer,
- d. the name of the contractor who installed the system,
- e. the name of the contractor who updated the drawings and specifications to 'as-built' status,
- f. the address of the building where the system is installed,
- g. the date of installation of the system,
- h. the date on which the system was tested or verified,
- i. the codes and standards to which the system was tested or verified,
- j. the signature of the person responsible for the verification, and
- k. the professional's seal if required (see items 2 and 3 below).

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.

2. For buildings that are required by Article 2.4.2.1. of Division C to be designed and to have construction reviewed by Architects **and/or** Professional Engineers, the following conditions should 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,
 - 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,**
 - c. the test of the fire suppression system and the required documentation of that test 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 suppression systems, and
 - d. once the test of the fire suppression system is complete, **the Certificate of Verification (see Appendix B) is to be sealed by the Professional Engineer assuming responsibility for the test.**
3. For buildings that are **not** required by Article 2.4.2.1. of Division C to be designed and to have construction reviewed by Architects or Professional Engineers, the following conditions should 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,
- 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. the test of the fire suppression system and the required documentation of that test 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 suppression systems, or
 - ii. an independent third party who, through training and experience, is familiar with the installation and functional requirements of fire suppression systems, and
- d. once the test of the fire suppression system is complete, **the Certificate of Verification (see Appendix B) should be signed by the person assuming responsibility for the verification.**

This INTERPRETATION is applicable throughout the province of Alberta.

APPENDIX A - FIRE ALARM SYSTEM VERIFICATION

Note: This Appendix does not form a mandatory part of this STANDATA.
It should be modified as necessary to meet specific project requirements.

_____ on behalf of
Name of Company or Person Performing Verification

_____ has carried out an on-
Name of Building Owner or Designer/Design Engineer
site verification of the Fire Alarm System installed at:

_____ *Address of Installation (City/Town)*

This verification was carried out in accordance with CAN/ULC-S537, "Verification of Fire Alarm Systems Installations," as required by Sentence 3.2.4.5.(2) of Division B of the Alberta Building Code 2006.

_____ hereby confirms that
Name of Company or Person Performing Verification

on _____, the Fire Alarm System as installed was reviewed for conformance with
Month/Day/Year
drawings and specifications originally prepared by:

_____ and subsequently
Name of Designer

updated to "As-Built" status by: _____
Name of Contractor

The Fire Alarm System was tested on _____ and found to be fully operational in
Month/Day/Year
accordance with:

1. The Alberta Building Code 2006,
2. CAN/ULC-S524-01, "Installation of Fire Alarm Systems," and
3. The Electrical Regulations made pursuant to the Safety Codes Act.

_____ *Name of Company or Person Performing Verification*

_____ *Signature of Person Responsible for Verification*

Note: Modifications of the Fire Alarm System after _____ will invalidate this
Month/Day/Year
Verification Certificate.

Signature of Person Assuming Responsibility for Verification

APPENDIX B - FIRE SUPPRESSION SYSTEM TEST

Note: This Appendix does not form a mandatory part of this STANDATA.
It should be modified as necessary to meet specific project requirements.

_____ on behalf of
Name of Company or Person Performing Verification

_____ has carried out an on-site test of the Fire Suppression System installed at:
Name of Building Owner or Designer/Design Engineer

_____ *Address of Installation (City/Town)*

This test was carried out in accordance with the appropriate NFPA standard noted below, as required by Sentence 3.2.5.13.(1) of Division B of the Alberta Building Code 2006.

_____ hereby confirms that
Name of Company or Person Performing Verification

on _____, the Fire Suppression System as installed was reviewed for conformance with
Month/Day/Year

drawings and specifications originally prepared by:

_____ and subsequently
Name of Designer

updated to "As-Built" status by: _____
Name of Contractor

The Fire Suppression System was tested on _____ and found to be fully operational in
Month/Day/Year

accordance with:

1. The Alberta Building Code 2006, and
2. The appropriate NFPA standard indicated below (check only one):
 - NFPA 13-2002, "Installation of Sprinkler Systems,"
 - NFPA 13R-2002, "Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height,"
 - NFPA 12, "Carbon Dioxide Extinguishing Systems,"
 - NFPA 16, "Installation of Foam-Water Sprinkler and Foam-Water Spray Systems,"
 - NFPA 17, "Dry Chemical Extinguishing Systems,"
 - NFPA 17A, "Wet Chemical Extinguishing Systems,"

_____ *Name of Company or Person Performing Test* _____ *Signature or Person Responsible for Test*

Note: Modifications of the Fire Suppression System after _____ will invalidate
Month/Day/Year

this Verification Certificate.

Signature of Person Assuming Responsibility for Test