MAINTENANCE OF FIRE PROTECTION DEVICES WITHIN RESIDENTIAL SUITES OF MULTI-FAMILY BUILDINGS

PURPOSE

The purpose of this document is to provide guidance to owners, fire protection service companies and Safety Codes Officers (SCO) when fire protection devices in private dwelling spaces of multi-family buildings are not accessible during the required annual test of the systems.

DISCUSSION

Multi-family residential condominium buildings are generally constructed in two basic styles:

i. Apartment style with public corridors, and
ii. Townhouse style with separate entrances and exits.

Apartment-style buildings will normally have a complete fire alarm and fire protection system. Most apartment-style condominiums fall under the *Condominium Property Act* (CPA) and are required to ensure overall building operations are maintained. In such cases, many condominiums retain property managers who can usually arrange access for fire service companies to inspect all core-building systems and a majority of individual suites for compliance purposes. Follow-up inspections can also be managed to ensure compliance.

Townhouse-style condominiums are strata-title developments that may not have common areas or linked building life safety services. These buildings usually have basic smoke alarms and, in some cases, residential sprinkler systems in each individual suite that is not linked for the whole complex. In such cases, SCOs and service companies may have difficulty in arranging access to suites to conduct the required inspection and maintenance.

When fire protection service companies cannot access fire protection devices that are located in the private dwelling space of multi-family buildings, it is identified as a deficiency in the annual test reports they prepare. This indicates to SCOs that the building fire protection and life safety systems are not being properly maintained in accordance with the National Fire Code – 2019 Alberta Edition NFC(AE) and its referenced standards.

Issue of this STANDATA is authorized by
the Provincial Fire Administrator

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The NFC(AE) requires qualified persons to perform annual maintenance on fire alarm systems, portable fire extinguishers and special fire suppression systems. Building owners, in conjunction with fire SCOs, need to establish a preventative maintenance plan to accommodate these requirements. The *Safety Codes Act* (SCA) and NFC(AE) establish the owner as being the party responsible for maintaining the fire protection and life safety systems of a building. Further, the SCA makes provisions for an SCO to enter a private dwelling with either the consent of the owner and/or occupant, or with a warrant from a justice should the owner decline the SCO's admittance. This is obviously not a reasonable approach to achieve the safety requirements of the NFC(AE).

The purpose of this Standata is to foster the cooperation between SCOs and owners to ensure that life safety systems within residential suites are inspected to ensure the devices perform as intended.

SCO'S RESPONSIBILITY:

An SCO has the authority to give owners permission to extend the test intervals of fire protection systems or devices as long as they are satisfied with the overall reliability of the system and that a fire protection service agency performs annual tests on core components. Some, but not all, fire alarm systems can perform self-diagnostics that monitor the condition of all circuits and can provide owners and service agencies with accurate information for scheduled maintenance. An SCO can use the merits of these systems to permit longer intervals between inspections and tests without compromising the reliability of the system. It is important to note that some devices in suites may not be electrically supervised or monitored.

SCOs should consider the following factors before extending test intervals:

- Age of building and systems
- Problems with systems
- Type of systems and the technology in use
- Frequency when all devices are expected to be tested by a qualified person
- Cooperation from owners
- Cooperation from testing agencies
- Owners involvement in annual visual inspections

OWNERS RESPONSIBILITY:

Owners of individual suites within a multi-family building are responsible for the maintenance of fire protection system components within their *dwelling unit*. The manufacturer's representative or sprinkler contractor will normally service sprinkler systems and standpipe and hose systems. Owners have the responsibility to hire qualified persons to maintain building safety systems and provide access for persons performing the work.

Additionally, an owner should visually examine the devices annually to ensure there is no physical damage, paint, corrosion, objects covering, or otherwise impair the operation of the devices in their unit. The owners' record can be submitted to the service agency to form part of the annual inspection report.

An owner's annual visual inspection should not extend more than three consecutive years. In the fourth year, owners should ensure that a qualified fire protection service representative performs the annual inspection and tests the devices in their suite.

It is important for owners to understand that by performing their own visual annual inspection there is still no guarantee the devices will continue to operate. Similarly, a qualified person can perform the required annual test on a device and have it fail the moment they certify the system as being operational. Only certain suite devices can be tested by an owner provided there is a test feature incorporated with the device. Generally, this applies to a local smoke alarm with a test button feature. It is also important for owners to understand they are not permitted to remove or repair devices within their suite and only service agencies with qualified personnel can perform this work.

The following outlines the types of devices and associated tests an owner is permitted to perform in their suites.

Fire Alarm System:

Audible Devices
Audible signal devices include horns, bells, piezoelectric devices or speakers. Annual testing by a qualified person involves a visual check for damage and hearing the device operate once.

An owner can do the following:

- Check to verify that the audible devices within the suite are not physically damaged, painted, corroded, covered over or tampered with.
- Record any occasion where an audible device has operated due to fire alarm system activation or testing (whenever possible)
- Where speakers are installed, check that they provide an intelligible voice message.

Note: The owner is capable of initiating and recording a test of an audible device only when the device has a built in manufacturer's test button for this purpose.

Visual Devices
Visual signal devices include strobe lights and light emitting diodes (LED). Annual testing by a qualified person involves seeing the operation of the device once.

An owner can do the following:

- Check to see visual devices within the suite are not physically damaged, painted, corroded, covered over or tampered with.
- Record the occasion where visual devices operated due to fire alarm system activation or testing (whenever possible)

Note: The owner is capable of initiating and recording a test of a visual device only when the device has a built in manufacturer's test button for this purpose.

Detection Devices
Detection devices include items such as local smoke alarms, heat detectors, sprinkler heads. Annual testing by a qualified person will not involve the testing of the local smoke alarm.

Local Smoke Alarm
Testing of the local smoke alarm is the owners' responsibility.

An owner can do the following:

- Test the smoke alarm on a monthly basis using the test button and follow the manufacturer's recommended maintenance procedures. Where batteries are replaceable in battery-operated smoke alarms they should be replaced annually.

Heat Detector
An owner is **not** permitted to test a heat detector. Annual testing by a qualified person usually involves the application of heat or the removal of the device. A heat detector will initiate a trouble or alarm on the control panel if there is any problem with the circuitry. Electrical supervision of the detector that indicates a trouble signal on the control panel warns owners that the reliability of the system is at risk. Any trouble signals on a control panel requires the immediate attention of a qualified service contractor.

An owner can:

- Check to see heat detectors within the suite are not physically damaged, painted, corroded, covered over or tampered with.

Sprinkler Head
Annual testing by a qualified person involves a visual inspection of the sprinkler head.

An owner can:

- Check to see that sprinkler heads are not physically damaged, painted, corroded, covered over or tampered with

An owner should keep copies of the record of the visual inspections and a copy could be provided to the service agency to include with their annual report and a copy for the AHJ upon request.

FAILURE TO COMPLY:

Where owners do not cooperate in maintaining fire protection devices, the fire authority can order compliance.

CODE REFERENCES
Article 6.1.1.1. states:

6.1.1.2. Maintenance

1) Fire protection installations shall be maintained in operating condition. (See Note A-6.1.1.2.(1).)

A-6.1.1.2.(1) Both the NBC(AE) and the NFC(AE) assume that all fire protection systems in a building, whether required by Code or voluntarily installed, will be designed in conformance with good fire protection engineering practice and will meet the appropriate installation requirements in relevant standards. Such good design is necessary to ensure that the level of safety established by the Code requirements is not reduced by a voluntary installation. Thus, a voluntarily installed system should be maintained in operating condition, at least to the extent that it was originally intended to function, in conformance with the applicable installation standards.

Article 6.3.1.2. states:

6.3.1.2. Inspection and Testing

1) Fire alarm systems shall be inspected and tested in conformance with CAN/ULC S536, "Inspection and Testing of Fire Alarm Systems."

Article 2.1.3.6. states:

2.1.3.6. Inspection, Maintenance and Testing of Fire Safety Devices
(See Note A-2.1.3.6.)

1) Where specific references to the inspection, maintenance and testing of fire safety devices and *building* fire safety features are not made in this Code, such devices and features shall be maintained to ensure they operate as per their design or function according to their original intent.

A-2.1.3.6. The Code requires the installation of several fire safety devices and building fire safety features for the control of fire hazards. The inspection, maintenance and testing requirements for many of these devices are referenced in the applicable Articles. However, several Sections of the Code do not include such references for certain fire safety devices and building fire safety features, examples of which include, but are not limited to:

- ventilation system interlocks and associated audible alarms for rooms or enclosed spaces containing flammable and combustible liquids (e.g. Subsection 4.1.7.)
- vapour detection alarm systems for rooms or enclosed spaces containing flammable and combustible liquids (e.g. Subsection 4.1.7.)
- bonding and grounding systems for flammable and combustible liquid handling processes (e.g. Subsection 4.1.8.)
- fill pipe backflow prevention systems for aboveground storage tanks for flammable and combustible liquids (e.g. Subsection 4.3.1.)
- leak detection monitoring devices for aboveground storage tanks for flammable and combustible liquids (e.g. Section 4.4.).

Article 2.2.1.1. of Division C states:

2.2.1.1. Responsibility

1) Unless otherwise specified, the *owner* or the *owner*'s authorized agent shall be responsible for carrying out the provisions of this Code.

Article 2.2.1.3. of Division C states:

2.2.1.3. Intervals Between Inspections and Tests

1) Longer intervals between the inspections and tests specified in this Code may be permitted provided the *authority having jurisdiction* is satisfied that such intervals do not reduce the reliability of the system or equipment requiring inspection or testing.

Section 2.3. of Division C states:

2.3.1. Documentation of Alternative Solutions
(See Note A-2.3.1.)

2.3.1.1. Documentation

1) Documentation conforming to this Subsection shall be provided by the person requesting the use of an alternative solution to demonstrate that the proposed alternative solution complies with this Code.
2) The documentation referred to in Sentence (1) shall include
    a. a Code analysis outlining the analytical methods and rationales used to determine that the proposed alternative solution will achieve at least the level of performance required by Clause 1.2.1.1.(1)(b) of Division A, and
    b. information concerning any special maintenance or operational requirements, including any component commissioning requirements, that are necessary for the alternative solution to achieve compliance with the Code after the *building* or facility is constructed.
3) The Code analysis referred to in Clause (2)(a) shall identify the applicable objectives, functional statements and acceptable solutions, and any assumptions, limiting or restricting factors, testing procedures, engineering studies or performance parameters that will support a Code compliance assessment.
4) The Code analysis referred to in Clause (2)(a) shall include information about the qualifications, experience and background of the person or persons taking responsibility for the design.
5) The information provided under Sentence (3) shall be in sufficient detail to convey the design intent and to support the validity, accuracy, relevance and precision of the Code analysis.

A-2.3.1. Documentation of Alternative Solutions. Beyond the purposes of demonstrating compliance and acquiring a building permit, there are other important reasons for requiring that the proponent of an alternative solution submit project documentation (i.e. a compliance report) to the authority having jurisdiction and for the authority having jurisdiction to retain that documentation for a substantial period following the construction of the building or facility:

- Most jurisdictions require that a building or facility be maintained in compliance with the codes under which it was built. Alternative solutions made possible by objective-based codes may have special maintenance requirements, which would be described in the documentation.
- Documentation helps consultants perform code compliance assessments of existing buildings or facilities before they are sold and informs current owners or prospective buyers of existing buildings or facilities of any limitations pertaining to their future use or development.
- Documentation provides design professionals with the basic information necessary to design changes to an existing building or facility.
- An alternative solution could be invalidated by a proposed alteration to a building or facility. Designers and regulators must therefore know the details of the particular alternative solutions that were integral to the original design. Complete documentation should provide insight as to why one alternative solution was chosen over another.
- Documentation is the “paper trail” of the alternative solution negotiated between the designer and the regulator and should demonstrate that a rational process led to the acceptance of the alternative solution as an equivalency.
- It is possible that over time a particular alternative solution may be shown to be inadequate. It would be advantageous for a jurisdiction to know which buildings or facilities included that alternative solution as part of their design: documentation will facilitate this type of analysis.

- Project documentation provides important information to a forensic team that is called to investigate an accident or why a design failed to provide the level of performance expected.

This Standata replaces 97 FCB 018(R1), “Maintenance of Fire Protection Devices within Residential Suites of Multi-family Buildings”.

Disclaimer:

The information in this bulletin is not intended to provide professional design advice. If professional expertise is required with respect to a specific issue or circumstance, the services of a professional should be sought.