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(Revised)

ELECTRICAL SUPERVISION & ISOLATION OF AUDIBLE SIGNAL DEVICES INSTALLED IN DWELLING UNITS

This bulletin is intended to clarify the requirements of the Vancouver Building By-law with respect to the installation of audible signal devices installed within dwelling units.

Sentence 3.2.4.18.(10) of Division B of the Vancouver Building By-law states that:

> "An audible signal device located within a *dwelling* unit or *suite* of *residential occupancy* shall be connected to the fire alarm system
> a) in a manner such that a single open circuit or short circuit at one device will not impair the operation of other audible signal devices on that same circuit that serve the other *dwelling units* or *suites* of *residential occupancy*, or
> b) on separate signal circuits that are not connected to the devices in any other *dwelling unit*, *public corridor* or suite of *residential occupancy*.
> (See Appendix A.)"

Impairment or damage to an audible signal device may occur as a result of tampering with the device or with the wiring that provides power supply to the device located in a dwelling unit. When damage to a device or associated wiring results in an open circuit, the criteria of Sentence 3.2.4.18.(10) "not impair operation of other audible signal devices" may be achieved by utilizing Class A wiring.

However, when damage to a device or associated wiring results in a short circuit, in order to meet the requirement of Sentence 3.2.4.18.(10) of the VBBL "not to impair the operation of other audible signal devices on that same circuit", a Class B wiring and installation of a special isolating device* are necessary for audible signal devices within a dwelling unit. It is important to note that isolating devices are required to be installed in locations that are accessible to qualified persons (ie. outside of the dwelling unit).

Sentence 3.2.4.18.(11) of Division B of the VBBL has been deleted to avoid any confusion in respect to the isolators required in Vancouver for audible signal devices installed within dwelling units. As each such isolating module contains an overcurrent device protecting the wiring to an audible signal device located within a dwelling unit, every audible signal device installed in the dwelling unit and connected to the isolating module is deemed to be in conformance with Clause 3.2.4.18.(10)(a) of the VBBL. However, for the purpose of Sentence 3.2.4.18.(13) which permits omission of means for manual silencing of an audible signal device within a dwelling unit under specific conditions, strict compliance with Clause 3.2.4.18.(10)(b) of the VBBL must be achieved.

*Note: (1) Some isolators for audible signal devices within a dwelling unit may not allow a fire alarm signal to sound if the alarm is activated subsequent to the short or open circuit (trouble signal) on the isolator. This condition is not acceptable as it conflicts with the intent of the Building By-law and ULC S524. Article 3.3.1.5. of ULC S524 specifically states that any open circuits or ground faults in the system shall not interfere with the operation of other circuits on the system. Thus, for instance, a suite that contains a short circuit must be

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isolated from the rest of the wiring in each possible mode [trouble(supervisory) mode and/or alarm mode]. If there is only a trouble mode in the system (a short circuit in the wiring to a suite audible device), the in-suite isolator must allow the amplifier to be turned on and to provide a required alarm or alert signal to sound when a fire alarm initiating device is actuated subsequent to the trouble signal. If the short circuit on the wiring to the audible device in the suite has occurred during an alarm condition, the in-suite isolator must provide a trouble indication on the annunciator and to allow an alarm or alert signal to sound on other audible devices of the circuit. When the trouble signal is reset (short circuit condition is cleared) the in-suite isolator should be operational.

(2) It is not intended by this requirement to provide an isolating device for audible signal devices located within a sleeping room of a hotel or motel suite that does not have a kitchen. A standard industry practise of utilizing Class B wiring without isolators for the audible signal devices located in hotel/motel suites without kitchens is deemed to be sufficient for the purpose of this bulletin.

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