

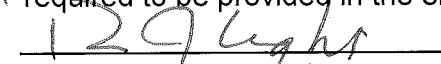
# BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing  
**AIBC, APEGBC, BOABC, POABC**

**File No: 12-0007**

**INTERPRETATION**

**Page 1 of 3**

Interpretation Date:	March 19, 2013
Building Code Edition:	BC Building Code 2012
Subject:	Fire detectors in elevator hoistways
Keywords:	Fire detectors, smoke detectors, heat detectors, sprinklers, elevator hoistway, elevator machine room
Building Code Reference(s):	3.2.4.11, 3.2.4.12
<b>Question:</b>	
	If a sprinkler is provided to protect an elevator hoistway, is any other fire detection required inside the hoistway?
<b>Interpretation:</b>	
	No.
	However, this may still be required for certain types of elevator hoistways.
	Sentence 3.2.4.11.(4) requires fire detectors referenced in Sentence 3.2.4.11.(2), to be installed in an elevator hoistway, if a sprinkler is not installed in the elevator hoistway. The referenced Sentence 3.2.4.11.(2) applies only to unsprinklered buildings in which case there would not be any sprinkler provided in the elevator hoistway anyway.
	However even in a fully sprinklered building there are situations where the elevator hoistway is exempt from having to provide sprinklers, for example under NFPA 13 references 8.15.5.2 and 8.15.5.5. It may also not be desired for various other reasons to provide sprinklers in the hoistway. This includes factors such as concerns of discharge of sprinkler water affecting electrical components of the elevator system and the added complexities and provisions of avoiding this, including by pre-emptive system shut downs. It might also be desired to eliminate sprinklers in the hoistway and related automatic elevator shutdown, in order to facilitate reliable use of the elevators under emergency conditions, such as for elevators designated for Firefighters Emergency Operation (FEO) or for firefighters elevators in high buildings. In such cases it is interpreted that in the absence of sprinklers in the hoistway, either heat detectors or smoke detectors are required to be provided in the elevator hoistway.
	 R. J. Light, Committee Chair
<small>The views expressed are the consensus of the joint committee with members representing AIBC, APEGBC, BOABC, and POABC, which form the BC Building Code Interpretation Committee. The purpose of the committee is to encourage uniform province wide interpretation of the BC Building Code. These views should not be considered as the official interpretation of legislated requirements based on the BC Building Code, as final responsibility for an interpretation rests with the local <i>Authority Having Jurisdiction</i>. The views of the joint committee should not be construed as legal advice.</small>	
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Page 2 of 3

However what is not clearly stated, is whether if sprinklers are provided in the hoistway, is any other fire detection required. Review of the various related regulations and standards, including NFPA 13, CSA B44-07, and good engineering practice considerations suggests additional fire detection may still be necessary in certain situations.

Clause 3.2.4.12.(1)(g) requires smoke detectors to be provided in elevator machine rooms. The Building Code does not currently have any definition of elevator machine room, therefore it seems appropriate to refer to the definition provided in the elevator standard CSA B44-07. Definitions are provided therein for control rooms, control spaces and machinery spaces which consider the various machine-room-less (MRL) elevators that are now commonly available and used. Most references in the elevator standard to a "machine room" have been replaced with "elevator machine room, machinery space, control space, or control room". Most requirements of the elevator standard for machine rooms therefore apply also to control rooms, control spaces and machinery spaces.

In some cases depending on the elevator type and configuration, the hoistway could contain components traditionally found in an "elevator machine room"; would also fall under this definition, and would therefore have to be provided with smoke detection. Depending on the type of elevator and hoistway design therefore, it is possible that automatic sprinklers (if no sprinkler exemption available) and smoke detectors would both be necessary in an elevator hoistway. In such cases the benefit of smoke detection for example, would be at least to activate before the sprinklers, thereby initiating elevator recall before sprinklers have an opportunity to activate and potentially cause damage.

It is noted also that the forthcoming elevator standard CSA B44-2010 has been amended and will require smoke detection in machine rooms, control rooms, control spaces and machinery spaces whereas the current B44-07 standard only requires this in Canada for the "machine room" portion.

It is currently considered good practice to have smoke detection in control rooms, control spaces and machinery spaces (some of these spaces may actually be located in the hoistway depending on the type and configuration of the elevator).



R. J. Light, Committee Chair

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File No: 12-0007

INTERPRETATION

Page 3 of 3

If the Building Code were to interpret that fire detectors are not required if a sprinkler is present in the hoistway, then it will be in conflict with CSA B44-2010 when it comes to MRL type elevators, as CSA B44-2010 indicates a smoke detector is required in a machinery space, which is typically at the top of the hoistway. The appropriate CSA B44-2010 excerpt is as follows:

### **"2.27.3.2.2**

In jurisdictions enforcing the NBCC, smoke detectors, or heat detectors in environments not suitable for smoke detectors (fire alarm initiating devices), used to initiate Phase I Emergency Recall Operation, shall be installed in conformance with the requirements of the NBCC, and shall be located

- (a) at each floor served by the elevator
- (b) in the associated elevator machine room, machinery space containing a motor controller or electric driving machine, control space, or control room"

(The phrase "jurisdictions enforcing the NBCC" is meant to distinguish Canadian jurisdictions as opposed to those in USA.)

Where fire detectors other than sprinklers are necessary, consideration also needs to be given to providing practical access for servicing, testing and maintenance of fire detection devices. Access doors in fire separations, used to facilitate such servicing, must be listed and have the appropriate fire protection rating.



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