

Purpose

This guideline has been developed to help improve consistency with the installation, education and enforcement of smoke alarms installed in residential dwelling units within Part 9 of the current National Building Code - Alberta Edition.



Code Reference

Current National Building Code - Alberta Edition Division B Section 9.10.19.
2015 Illustrated Users Guide – NBC 2010 Part 9 of Division B Housing and Small Buildings Section 9.10.19.
CAN/ULC-S553-14 “Standard for the Installation of Smoke Alarms”



Summary

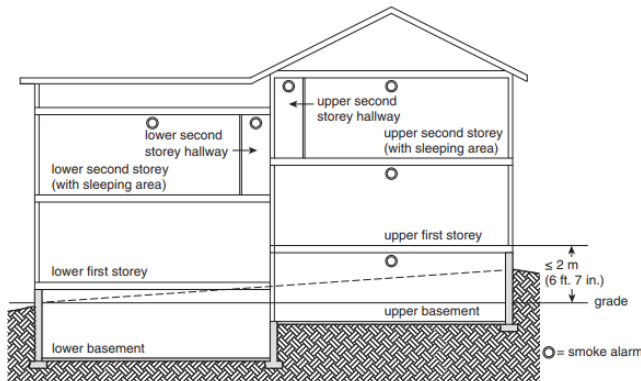
This document is specific towards residential single family, duplex, townhouses, or row housing where each dwelling unit is an individual unit constructed without a fire alarm system.



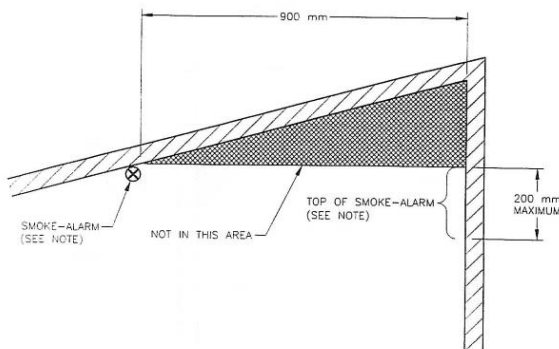
Interpretation

This Guideline provides clarity and direction from Rocky View County on their interpretation of the requirement for smoke alarms installed in residential dwelling units. Smoke alarms should be located where they will be exposed to air flow during a fire condition, so that early detection is provided.

- 1) Locations – Smoke alarms are required by the current National Building Code - Alberta Edition to be installed in each dwelling unit, and in every ancillary or common space in a house with a secondary suite.
Within a dwelling unit, a smoke alarm must be installed on each storey including the basement. Where that storey includes a bedroom, the smoke alarm shall be located in the following location(s).
 - a) In each sleeping room, and
 - b) In a location between the sleeping rooms and the remainder of the storey, or if the sleeping rooms are served by a hallway, this smoke alarm shall be located in the hallway.



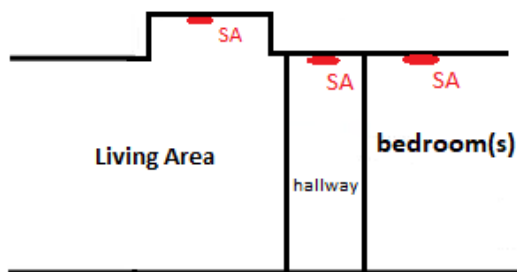
- 2) **Sloped Ceilings** – In rooms with a slope greater than 1 in 8, the smoke alarm must be located on the ceiling at the high side of the room or on the wall with the top of the smoke alarm mounted not more than 200 mm (8”) below the dead air space. The “dead air space” is the triangular area with the base of the triangle measuring 900 mm (36”) at 90 degrees to the wall.



- 3) **Raised / Tray Ceilings** – Where individual storeys have multiple ceiling heights, such as a tray ceiling, these areas can create an area where smoke will build up before traveling to lower ceiling areas where the smoke alarm is located, causing a delay in the detection of the smoke.

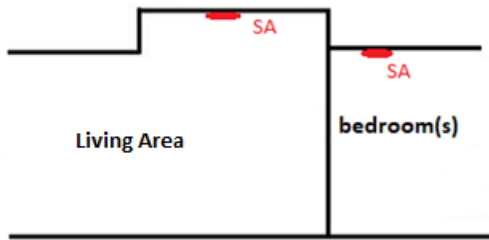
For this reason, where a ceiling has a raised / tray ceiling located within the main living area (living room, family room etc.) the smoke alarm(s) must be placed:

- a) In the hallway to a bedroom if a hallway is provided. An additional smoke alarm should be located within a raised / tray ceiling to ensure early detection is provided for the occupants, or

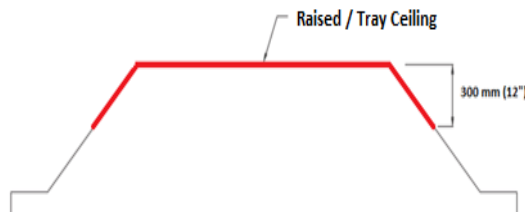




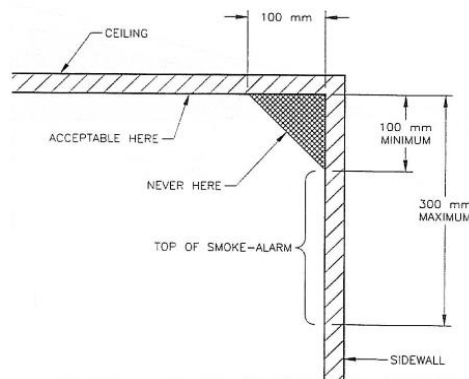
- b) Where no hallway to the bedroom(s) is provided on that storey, the smoke alarm required for that storey should be located in the raised tray ceiling.



- 4) Bulkheads – Where a bulkhead is framed into a ceiling, such as in a basement area, a smoke alarm can be located on the underside of the bulkhead, on the ceiling, or on the top 300mm (12”) of the wall.



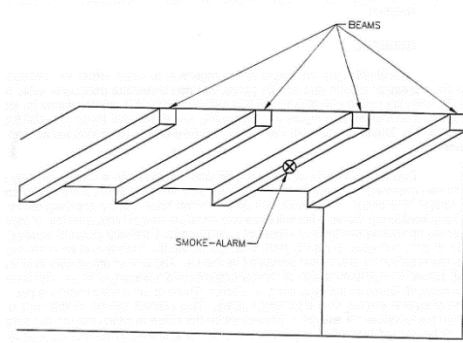
- 5) Dead Air Space – Smoke alarms must be located where they will be exposed to air flow during a fire condition, and not in the vicinity of a dead air space. Corners where the ceiling and wall meet, is an air space where smoke may have difficulty penetrating. In these areas, the “dead air space” is the triangular area with the base of the triangle measuring 100 mm (4”) along the ceiling from the corner, and about 100 mm (4”) down the wall. These dead air spaces may also be found between joists and beams.



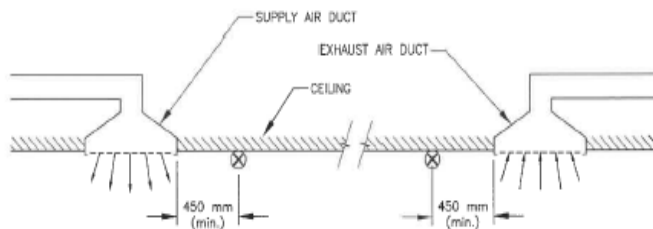
- 6) Basements – In an unfinished basement, the smoke alarm should be located in close proximity to the stairs leading to the level above.
- 7) Bathrooms – Smoke alarms should not be located within 1 m of the center of the doorway header wherever possible.
- 8) Kitchen – Smoke alarms should not be located less than 3000 mm (9’10”) from a fixed cooking appliance.



- 9) Exposed/dropped Joists or Beams— Smoke alarms should be located on the bottom of an exposed/dropped joist or beam.



- 10) Proximity to Ceiling Fans – Smoke alarms shall be mounted a minimum of 1 meter (39”) from the tip of the blade of a ceiling fan.
- 11) Proximity to Air Supplies – Smoke alarms shall be mounted a minimum of 450 mm (18”) away from the edge of supply air and return air outlets.



- 12) Testing – Upon completion of the installation, all installed smoke alarms shall be tested according to the manufacturer’s specifications and CAN/ULC-S552 “Standard for Inspection” to ensure proper installation and operation.
- 13) Interconnection of Devices – If you have more than one smoke alarm in your home, they must be connected in a way that if one goes off, all of them will sound the alarm. In houses with a secondary suite, the smoke alarms in the entire house must be connected either wirelessly or through wiring so that if one alarm goes off, all alarms in both the main house and the secondary suite will sound.



Reference

Approval Date

• October 2024

Last Review Date

• October 2024