



Heat Detector Installation Guidelines - Secondary Suites

This guide has been prepared to outline the City of North Vancouver policy for the installation of heat detectors in furnace rooms of single-family dwellings with secondary suites.

Rationale

The B.C. Building Code requires furnace rooms to be separated by construction that will achieve a fire resistance rating of either 30 or 45 minutes. Most furnace rooms within single family dwellings are ducted to a furnace plenum that feeds a horizontal trunk duct. Branch ducts are then fed from this trunk duct to rooms and spaces. The arrangement of the plenum and trunk duct requires an extreme amount of duct repositioning, installation of drywall and fire dampers to achieve compliance with these fire compartmentalizing requirements.

Equivalency

Article 2.5.1.2 of the B.C. Building Code allows for alternate methods to achieve the required level of fire protection. A 120 volt heat detector may be used within the furnace room to **replace the fire-resistance rating for the ceiling and some of the walls**, provided the heat detector is wired to audible devices on each floor. This will provide early warning to the occupants, in case of a fire, allowing them to vacate the premise.

The walls within the furnace room that can be drywalled will still require a fire rating. This may be achieved by applying one layer of 5/8" drywall to the inside face of the furnace room wall.

The procedure for the installation of the heat detector follows.

Heat Detector Installation

The heat detector in the furnace room is to be permanently wired from a circuit in the electrical panel. It is preferable that this circuit also supplies the lighting in hall or living areas adjacent to the furnace room. This way, if there is a power failure for that circuit, it will be detected.

Two fire alarm bells, one for the main part of the house and one for the secondary suite, are required to be connected to the heat detector to provide an audible alarm when the heat detector senses excessive heat in the furnace room.

The fire alarm bells may be activated directly from the heat detector, if permitted by the amperage and voltage ratings. For installations where the amperage rating is not sufficient, the heat detector may activate a relay, which in turn will activate the bells.

Where the voltage required for the bells is less than 120 volts, a transformer will be required to be connected to the circuit described above. Also, as described above, the bells may be activated with or without the use of a relay mounted in a junction box.

In either case a test button or switch is also required to be installed to test that the bells are functioning and audible.

Please note these guidelines are only given to help a certified electrical contractor design and install a fire detection system for a secondary suite. Other system designs may also be acceptable.

Further information

Please refer to Handout #R8, Secondary Suite Code Specifications, for a detailed list of requirements.