

*Exception: Initiating devices connected to a system that provides the required monitoring.*  
[72:17.4.6]

**5.8.5.1.5** Initiating devices shall not be located in areas where environmental conditions cause an adverse effect on the initiating devices' ability to detect the targeted hazardous gas.

**5.8.5.2 Alarm Signal Initiation — Initiating Devices with Separate Power and Signaling Wiring.**

**5.8.5.2.1** Automatic [carbon monoxide] alarm signal initiating devices that have integral trouble signal contacts shall be connected to the initiating device circuit so that a trouble condition within a device does not impair alarm transmission from any other initiating device.

*Exception: Where the trouble condition is caused by electrical disconnection of the device or by removing the initiating device from its plug-in base.*  
[72:23.8.5.3.1]

**5.8.5.2.2\*** Automatic [carbon monoxide] alarm signal initiating devices that use a nonintegral device to monitor the integrity of the power supply wiring to the individual initiating devices shall have the nonintegral device connected to the initiating device circuit so that a fault on the power supply wiring does not impair alarm transmission from any operational initiating device. [72:23.8.5.3.2]

**5.8.5.3 Requirements for Carbon Monoxide Detectors.**

**5.8.5.3.1** Carbon monoxide detectors shall be installed as specified in the manufacturer's published instructions in accordance with 5.8.5.3.1(1) and 5.8.5.3.1(2), or 5.8.5.3.1(3):

- (1)\*On the ceiling in the same room as permanently installed fuel-burning appliances
- (2)\*Centrally located on every habitable level and in every HVAC zone of the building
- (3) A performance-based design in accordance with 5.8.5.3.2

**5.8.5.3.2 Performance-Based Design.**

**5.8.5.3.2.1** Performance-based designs submitted to the authority having jurisdiction for review and approval shall include documentation, in an approved format, of each performance objective and applicable scenario, together with any calculations, modeling, or other technical substantiation used in establishing the proposed design's [ ] life safety performance. [72:17.3.1]

**5.8.5.3.2.2** The authority having jurisdiction shall determine whether such identified performance objectives are appropriate and have been met. [72:17.3.2]

**5.8.5.3.2.3** The authority having jurisdiction shall approve modifications to or variations from the approved design or design basis in advance. [72:17.3.3]

**5.8.5.3.3** Carbon monoxide detectors shall be marked in accordance with their listing. Detector thresholds shall be set to respond at the levels specified by ANSI/UL 2034, *Standard for Single and Multiple Station Carbon Monoxide Alarms*.

**5.8.5.3.4** All carbon monoxide detectors shall be located and mounted so that accidental operation will not be caused by jarring or vibration.

**5.8.5.3.5** The location of carbon monoxide detectors shall be based on an evaluation of potential ambient sources and flows of carbon monoxide, moisture, temperature, dust, or fumes

and of electrical or mechanical influences to minimize nuisance alarms. [72:17.7.1.9]

**5.8.5.3.6** The selection and placement of [carbon monoxide] detectors shall take into account both the performance characteristics of the detector and the areas into which the detectors are to be installed to prevent nuisance and unintentional alarms or improper operation after installation. [72:17.7.1.7]

**5.8.5.3.7** Unless specifically designed and listed for the expected conditions, carbon monoxide detectors shall not be installed where any of the following ambient conditions exist:

- (1) Temperature below 32°F (0°C)
- (2) Temperature above 100°F (38°C)
- (3) Relative humidity outside the range of 10 percent to 95 percent

**5.8.5.3.8** Unless tested and listed for recessed mounting, carbon monoxide detectors shall not be recessed into the mounting surface.

**5.8.5.3.9 Protection During Construction.**

**5.8.5.3.9.1** Where detectors are installed for signal initiation during construction, they shall be replaced prior to the final commissioning of the system.

**5.8.5.3.9.2** Where detection is not required during construction, detectors shall not be installed until after all other construction trades have completed cleanup. [72:17.7.1.11.3]

**5.8.5.4 Carbon Monoxide Detectors for Control of Carbon Monoxide Spread.**

**5.8.5.4.1** System designers shall consider the spread of carbon monoxide through an occupancy through the HVAC system.

**5.8.5.4.2** Interaction with smoke control systems, if such is provided, shall be coordinated.

**5.8.6 Carbon Monoxide Alarm Notification System Notification Outputs.**

**5.8.6.1 General.** The performance, location, and mounting of notification appliances used to initiate or direct [action], evacuation or relocation of the occupants, or for providing information to occupants or staff, shall comply with Chapter 6. [72:18.1.3]

**5.8.6.2 Occupant Notification.**

**5.8.6.2.1** Except as permitted in 5.8.6.2.2, occupant notification shall be throughout the protected premises.

**5.8.6.2.2** Where carbon monoxide alarm signals are transmitted to a constantly attended on-site location or off-premises location in accordance with Chapter 7, selective public mode occupant notification shall be permitted to be limited to the notification zone encompassing the area where the carbon monoxide alarm signal was initiated.

**5.8.6.3 Notification Zones.**

**5.8.6.3.1** Notification zones shall be consistent with the emergency response plan for the protected premises.

**5.8.6.3.2\*** The boundaries of notification zones shall be coincident with the area where the alarm initiation originated and other signaling zones in accordance with the building's emergency response plan.