MINNESOTA DEPARTMENT OF
LABOR & INDUSTRY

Department of Labor and Industry
Construction Codes and Licensing Division
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The State of Minnesota adopts a set of construction standards known as the Minnesota State Building Codes (MSBC). The MSBC contains safety requirements relating to structure, mechanical, plumbing, energy, electrical, elevators, manufactured buildings and life safety.

The information in this brochure is for general reference for residential construction projects. Contact your municipal building official regarding permits and specific code requirements for residential construction within your community.

To confirm if your contractor is licensed in Minnesota contact the:

Department of Labor and Industry
Residential Building Contractors
Phone: (651) 284-5069 or 1-800-657-3944
www.doli.state.mn.us/contractor.html
E-mail: DLI.Contractor@state.mn.us

www.doli.state.mn.us
www.mncodes.org

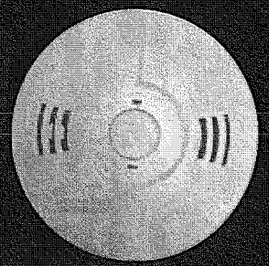
05-07

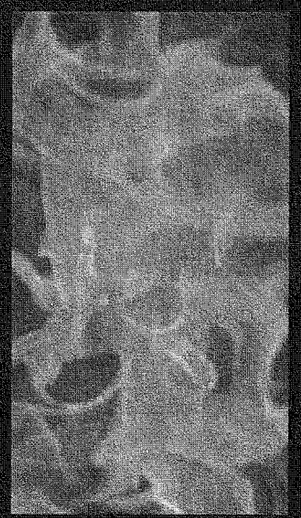
Gopher State One Call
Call at least two full business days before you dig.
Phone: 811 or (651) 454-0002
www.call811.com

811

SMOKE ALARMS and CARBON MONOXIDE DETECTORS

Guidelines for placement and use of smoke alarms and carbon monoxide detectors.





Why are smoke alarms required?

Fire deaths occur in residential buildings more than in any other building type. More than half of all fire deaths in residential buildings occur while the occupants are asleep and are unaware. Death usually results from asphyxiation, long before the fire reaches the occupants.

Smoke alarms installed in a home give an early warning of smoke and give the occupants the critical few moments needed to escape.

To address the loss of life in residential buildings, the Minnesota State Building Code (MSBC) has requirements for the installation of smoke alarms in a home. The 2007 MSBC adopts the 2006 International Residential Code (2006 IRC). All "R" code references provided in this brochure pertain to the 2006 IRC.

In general, the code requires that smoke alarms be provided on each floor of a dwelling and in the corridor giving access to bedrooms and in bedrooms. Alarms in new construction must receive their power from the building wiring and have a battery backup in the event of electrical power loss. During remodeling, where connection to the building wiring is difficult to achieve, battery-operated alarms may be used (R313.1.1).

An important feature of the requirement for alarms being connected into the building's electrical wiring is there must be no disconnecting means other than the primary over current protection (fuse or circuit breaker). Alarms must be wired directly into the building's wiring system and no switches, plugs or mechanical disconnects are permitted between the electric service panel and the alarm.

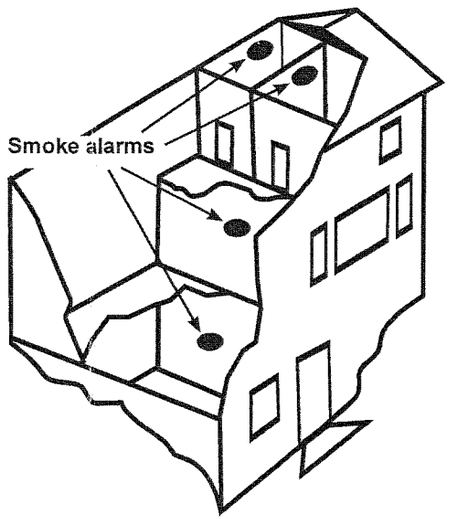
Specific code requirements

General

Dwelling units, congregate residences and hotel or lodging guests rooms that are used for sleeping purposes must be provided with smoke alarms. Alarms must be installed in accordance with the approved manufacturer's instructions.

Power source

In new construction, the required smoke alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source. When primary power is interrupted, smoke alarms shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke alarms shall be permitted to be battery operated when installed in buildings without commercial power or in buildings that undergo alterations, repairs or additions regulated by R313.3.



Construction Codes and Licensing

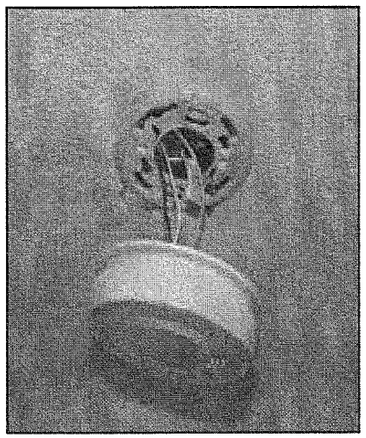
Smoke detection and notification

All smoke alarms shall be listed in accordance with Underwriters Laboratory 217 and installed in accordance with the provisions of this code and the household fire warning equipment provisions of National Fire Protection Agency (NFPA) 72.

Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms, shall be permitted. The household fire alarm system shall provide the same level of smoke detection and alarm as required by this section for smoke alarms in the event the fire alarm panel is removed or the system is not connected to a central station (R313.1).

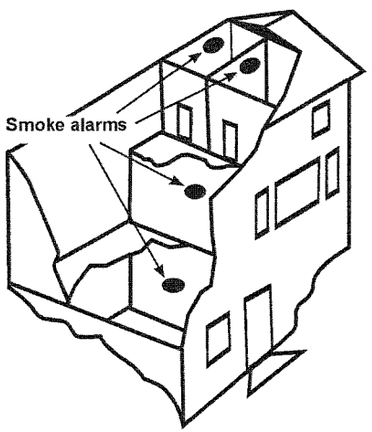
Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.



When more than one smoke alarm is required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

All smoke alarms shall be listed and installed in accordance with the provisions of this code and the household fire warning equipment provisions of NFPA 72 (R313.2).



Alterations, repairs and additions

When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings, the smoke alarms shall be interconnected and hard wired.

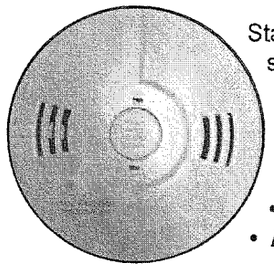
Exceptions:

1. Interconnection and hardwiring of smoke alarms in existing areas shall not be required to be hardwired where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure.
2. Work on the exterior surfaces of dwellings, such as the replacement of roofing or siding are exempt from the requirements of this section.
3. Permits involving alterations or repairs to plumbing, electrical and mechanical are exempt from the requirements of this section (R313.2.1).

Carbon monoxide alarms alert residents of a toxic, odorless gas

Carbon monoxide (CO) is a toxic, colorless, odorless gas that is formed as a product of the incomplete combustion of carbon or a carbon compound. Poisoning is caused by inhalation of CO. There are many symptoms for CO poisoning including headache, nausea, confusion and shortness of breath. These can lead to convulsion, unconsciousness, coma and death.

CO is produced by combustion engine exhaust, portable propane heaters, barbecues burning charcoal and portable or non-vented natural gas appliances.



State law requires CO detectors be placed in new and existing residential structures in Minnesota where building permits are obtained. The requirement is found at Minnesota Statutes, § 299F.50.

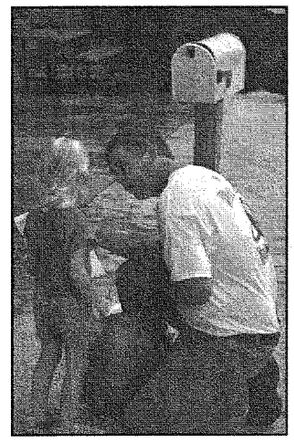
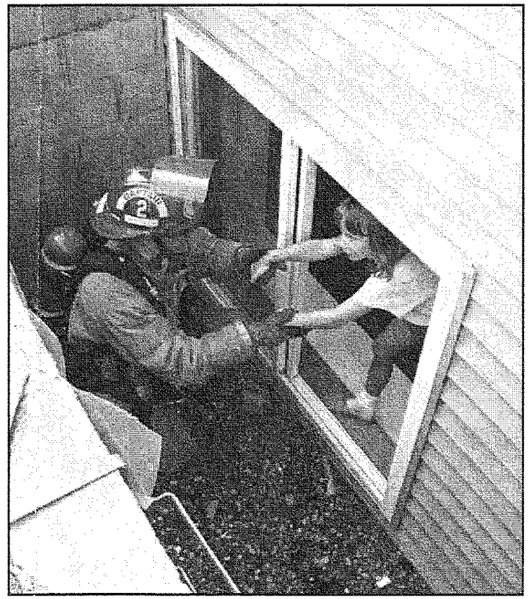
The CO detector effective dates are:

- **Jan. 1, 2007: All new residential buildings**
- **Aug. 1, 2008: Existing single-family homes**
- **Aug. 1, 2009: Multi-family dwellings**

The Department of Public Safety, State Fire Marshal Division lists the code requirements online at www.fire.state.mn.us or call (651) 201-7200 for more information.

Smoke detector is just one part of emergency escape plan

A smoke detector is just one part of an emergency escape safety plan. Everyone in the residence should know what a smoke detector alarm sounds like and practice what to do when the alarm is activated, especially if a fire occurs in the middle of the night and no lights are available to aid escape.



When a fire occurs, time is critical to survival. Be sure to select a safe place where everyone can meet after escaping such as a mailbox or sidewalk. Never go back into a buring building for any reason. More fire safety tips are online at www.firesafety.gov.