

CTC AREA OF STUDY – CARBON MONOXIDE DETECTORS

2006/2007 ICC CODE DEVELOPMENT CYCLE CARBON MONOXIDE RELATED CHANGES

RB109–06/07

R313, R313.1.1 (New), Chapter 43

Proponent: Roger R. Evans, Park City Municipal Corporation, Utah, representing Utah Chapter of ICC

1. Revise as follows:

**SECTION R313
SMOKE ALARMS**

2. Add new text as follows:

R313.1.1 Carbon monoxide alarms. Carbon monoxide alarms shall be installed on each habitable level of a dwelling unit equipped with fuel burning appliances. All carbon monoxide detectors shall be listed and comply with UL 2034 and shall be installed in accordance with provisions of this code and NFPA 720. Approved combination smoke and carbon monoxide detectors shall be permitted.

3. Add standard to Chapter 43as follows:

UL

2034–96

Standard for Single and Multiple Station Carbon Monoxide Alarms

NFPA

720-05
Dwelling Units

Standard for the Installation of Carbon Monoxide (CO) Warning Equipment in

Reason: According to the Journal of the American Medical Association (JAMA), carbon monoxide is the leading cause of accidental poisoning deaths in America. 1,500 people die annually due to accidental carbon monoxide exposure and additional 10,000 seek medical attention. (Medical experts agree that it's difficult to estimate the total number of carbon monoxide incidents because the symptoms of carbon monoxide poisoning resemble so many other common ailments.) www.homesafe.com

Cost Impact: The code change proposal will increase the cost of construction between \$50.00 to \$200.00 per residential unit.

Analysis: Results of the review of the proposed standard(s) will be posted on the ICC website by August 20, 2006.

Public Hearing: Committee:

AS

AM

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Assembly:

ASF

AMF

DF

RB110–06/07

R313, R313.2 (New), R313.3

Proponent: Frank Stanonik, Gas Manufacturers Association (GAMA)

1. Revise as follows:

**SECTION R313
SMOKE ALARMS AND CARBON MONOXIDE ALARMS**

2. Add new text as follows:

R313.2 Single- or multiple-station carbon monoxide alarms. Single- or multiple-station carbon alarms shall be installed in the following locations:

1. Outside of each separate sleeping area within 10 feet of any bedroom door.
2. On each additional story of the dwelling, including basements, but not including crawl spaces and uninhabitable attics.

Carbon monoxide alarms shall be listed and labeled as complying with ANSI/UL 2034, *Standard for Single and Multiple Station CO Alarms*, or CSA 6.19, *Residential Carbon Monoxide Detectors*, and shall be installed in accordance with the manufacturer's installation instructions and NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Warning Equipment in Dwelling Units*. Listed combination smoke and carbon monoxide alarms shall be acceptable.

(Renumber subsequent sections)

3. Revise as follows:

R313.3 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, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke and carbon monoxide 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 Section R313.2.1.

4. Add standards to Chapter 43 as follows:

UL

2034-96

Standard for Single and Multiple Station Carbon Monoxide Alarms

NFPA

720-05

Standard for the Installation of Carbon Monoxide (CO) Warning Equipment in

Dwelling Units

Reason: The proposed addition to the code would require the installation of carbon monoxide (CO) alarms in dwellings regulated under the International Residential Code. CO is a colorless, odorless gas that is a product of incomplete combustion of fuels such as oil, natural gas, kerosene, gasoline, and wood. High concentrations of CO present a health hazard. Due to the nature of CO, it is only detectible with CO sensing instruments.

The Consumer Product Safety Commission (CPSC) estimates that in 2002 there were 188 CO poisoning deaths associated with the use of a consumer product. It is important to note that the CPSC estimate only includes residential use of consumer products; therefore, fatalities resulting from exposure to CO from an automobile are not included, even in the case of an attached garage.

The proposal applies to all homes because there are a variety of sources of CO, some that are portable, which may cause elevated CO concentrations in a home. For instance, the CPSC estimates that 54% of annual CO fatalities are due to heating systems, while the remaining 46% are attributable to other items such as portable generators, camp stoves, or charcoal grills. Many states and local jurisdictions have already adopted legislation requiring the installation of CO alarms in homes, most recently in Massachusetts.

The proposed code requires carbon monoxide alarms to be listed as ANSI/UL 2034 or CSA 6.19 compliant. These performance standards for CO alarms provide assurance that the product meets specific performance standards. Many questions have been raised as to the reliability, performance, and length of life of a CO alarm. A study published by Mosaic Industries in 2003 titled "Evaluating the Performance of Residential CO Alarms" raises such questions. It is important to note that while the report was published in 2003, all of the alarms tested were manufactured prior to the year 2000. There have been many revisions to the product standards since that time. In an effort to harmonize ANSI/UL 2034 with CSA 6.19 and to update ANSI/UL 2034, revisions have been to increase the number of gases in the Selectivity Test, modify the requirements in the Effect of Shipping and Storage Test, add a new Section 74A to address reliability requirements, and a low humidity test requirement. These product standards continue to improve and have already addressed many of the performance concerns that have raised concern during past CO alarm code proposals.

Bibliography: "Non-Fire Carbon Monoxide Deaths Associated with the Use of Consumer Products, 2002 Annual Estimates," Consumer Product Safety Commission

Cost Impact: The code change proposal will increase the cost of construction. The average retail price of a carbon monoxide alarm is \$30.

Analysis: Results of the review of the proposed standard(s) will be posted on the ICC website by August 20, 2006.

Public Hearing: Committee:

AS

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Assembly:

ASF

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