OFFICE OF THE STATE FIRE MARSHAL

NOTICE OF PROPOSED RULES

TITLE 41: FIRE PROTECTION
CHAPTER I: OFFICE OF THE STATE FIRE MARSHAL

PART 112
CARBON MONOXIDE ALARMS AND DETECTORS

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AUTHORITY: Implementing and authorized by Sections 10-20.56 and 34-18.49 of the School Code [105 ILCS 5/10-20.56 and 34-18.49] and the Carbon Monoxide Alarm Detector Act [430 ILCS 135].

SOURCE: Adopted at 40 Ill. Reg. _____, effective _____.

Section 112.100 Purpose and Scope

This Part implements the provisions of the School Code that delegate responsibility to the Office of the State Fire Marshal to promulgate regulations defining the carbon monoxide detectors that may be used public schools. (See 105 ILCS 5/10-20.56 and 34-18.49.) This Part also includes the specifications for approved carbon monoxide alarms established by the Carbon Monoxide Alarm Detector Act [430 ILCS 135] as referenced in the School Code.

Section 112.120 Severability

If any Section, subsection, sentence or clause of this Part shall be held by a court of competent jurisdiction to be invalid, that holding shall not affect the remaining portions of this Part.

Section 112.140 Definitions

The following definitions are used in this Part:

"Act" means the Carbon Monoxide Alarm Detector Act [430 ILCS 135].

"Alarm control unit" means a carbon monoxide detection system or fire alarm system component that monitors inputs and controls outputs through various types of circuits.

"Carbon monoxide alarm" or "alarm" means a single-station or multiple-station carbon monoxide alarm intended for the purpose of detecting carbon monoxide gas and alerting occupants by a distinct audible signal. An alarm is comprised of an assembly that incorporates a sensor, control components, and an alarm notification appliance in a single unit operated from a power source either located in the unit or obtained at the point of installation.

"Carbon monoxide detection system" means a system that consists of an alarm control unit, components, and circuits arranged to monitor and annunciate the status of carbon monoxide alarm initiating devices and to initiate the appropriate response to those signals.

"Carbon monoxide detector" or "detector" means a device having a sensor that responds to carbon monoxide gas and that is connected to an alarm control unit. [105 ILCS 5/10-20.56(a) and 34-18.49(a)]

"NFPA" means the National Fire Protection Association.

"UL" means Underwriters Laboratories.

Section 112.180 Incorporations by Reference

a) All the materials incorporated by reference in this Section are incorporated as of the date specified and include no later editions or amendments.

b) The following materials are incorporated by reference:

NFPA 720: Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment, (2015 edition), NFPA; 1 Batterymarch Park, Quincy MA 02269; (617)770-3000 or (800)344-3555; www.nfpa.org.

UL 217: Standard for Smoke Alarms (8th edition; October 30, 2015); Underwriters Laboratories, 333 Pfingsten Road, Northbrook IL 60062; (877)854-3577; www.ul.com.

UL 268: Smoke Detectors for Fire Alarm Systems (7th edition; January 11, 2016); Underwriters Laboratories, 333 Pfingsten Road, Northbrook IL 60062; (877)854-3577; www.ul.com.

UL 2034: Standard for Single and Multiple Station Carbon Monoxide Alarms (3rd edition; February 28, 2008); Underwriters Laboratories, 333 Pfingsten Road, Northbrook IL 60062; (877)854-3577; www.ul.com.

UL 2075: Standard for Gas and Vapor Detectors and Sensors (2nd edition; March 5, 2013); Underwriter's Laboratories, 333 Pfingsten Road, Northbrook IL 60062; (877)854-3577; www.ul.com.

Section 112.200 Approved Carbon Monoxide Alarms for Use in Dwelling Units

An approved carbon monoxide alarm used in an occupancy or structure that has one or more dwelling units, as defined in the Act, must be listed in accordance with UL 2034, as incorporated by reference in Section 112.180. An approved combined carbon monoxide and smoke alarm used in an occupancy or structure that has one or more dwelling units, as defined in the Act, must be listed in accordance with UL 2034 and UL 217, as incorporated by reference in Section 112.180.

Section 112.230 Approved Carbon Monoxide Alarms for Use in Public Schools

a) Carbon monoxide alarms in public schools must be listed in accordance with UL 2034, as incorporated by reference in Section 112.180.

b) Combined carbon monoxide and smoke alarms must be listed in accordance with UL 2034 and UL 217, as incorporated by reference in Section 112.180.

c) For public schools designed on or after January 1, 2016, any carbon monoxide alarm installed to achieve compliance with the School Code and this Part must be monitored by any required fire alarm system and must be permanently powered by the building's electrical system. Such carbon monoxide alarms for use in new public schools may not be electric plug-in or battery operated.

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Section 112.250 General Requirements for Carbon Monoxide Detectors or Detection Systems in Public Schools

a) For public schools designed on or after January 1, 2016, a carbon monoxide detection system or carbon monoxide detectors installed to achieve compliance with the School Code and this Part must be monitored by any required fire alarm system and must be permanently powered by the building's electrical system.

b) A carbon monoxide detection system constructed and installed pursuant to this Section and its components must be listed by UL for the purpose for which it is used and must be cross-listed by UL with the panel to which it is connected.

c) Carbon monoxide detectors shall be listed in accordance with UL 2075, incorporated by reference in Section 112.180.

d) Combined carbon monoxide and smoke detectors installed in carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide detectors provided the combination detectors are listed in accordance with UL 2075 and UL 268.

e) Carbon monoxide detection system or carbon monoxide detector components must be installed and maintained in accordance with the manufacturer's published instructions and NFPA 720, incorporated by reference in Section 112.180, except that the location and the frequency of inspection and testing of carbon monoxide detectors shall be as prescribed in Section 10-20.56(b) or 34-18.49(b) of the School Code, as applicable.

f) All carbon monoxide detection systems and carbon monoxide detectors must have an audible alarm signal that is distinctive from other alarm signals and is a four-pulse temporal pattern as prescribed in NFPA 720.

g) Carbon monoxide detection systems or carbon monoxide detectors must have occupant notification throughout the building, except where the signal is transmitted to a constantly attended location on-premise or off-premise where response action can be taken. The occupant notification zone may be limited to the area where the carbon monoxide alarm signal was initiated.

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h) Signals from carbon monoxide detection systems and carbon monoxide detectors transmitted to a fire alarm system shall not transmit a fire alarm signal.

UL 2034

Standard for Single and Multiple Station Carbon Monoxide Alarms

1.1 These requirements cover electrically operated single and multiple station carbon monoxide (CO) alarms intended for protection in ordinary indoor locations of dwelling units, including recreational vehicles, mobile homes, and recreational boats with enclosed accommodation spaces and cockpit areas.

1.2 Carbon monoxide alarms covered by these requirements are intended to respond to the presence of carbon monoxide from sources such as, but not limited to, exhaust from internal-combustion engines, abnormal operation of fuel-fired appliances, and fireplaces. Carbon monoxide alarms are intended to alarm at carbon monoxide levels below those that cause a loss of ability to react to the dangers of carbon monoxide exposure. See Table 39.1, Part A, Alarm - carbon monoxide concentration and response time.

1.3 Carbon monoxide alarms covered by this standard are not intended to alarm when exposed to long-term, low-level carbon monoxide exposures or slightly higher short-term transient carbon monoxide exposures, possibly caused by air pollution and/or properly installed/maintained fuel-fired appliances and fireplaces. See Table 39.1, Part B, False alarm resistance specifications.

1.4 These requirements, where applicable, also cover all remote accessories that may be connected to or are intended to be employed with a single or multiple station carbon monoxide alarm. See 35.2.1.

1.5 This standard does not cover the following:

a) Single and multiple station smoke alarms that are covered by the Standard for Single and Multiple Station Smoke Alarms, UL 217, or the Standard for Smoke Alarms, ULC-S531.

b) Smoke alarms of the nonself-contained type that are intended for connection to a household or industrial system control unit. These are included in the Standard for Smoke Detectors for Fire Alarm Signaling Systems, UL 268, or the Standard for Smoke Detectors, Fire Alarm, ULC-S529.

c) Mechanically operated single and multiple station fire alarm devices that are specified in the Standard for Single and Multiple Station Heat Detectors, UL 539, or the Standard for Heat Actuated Fire Detectors, Fire Alarm, ULC-S530.

d) Heat alarms whose requirements are covered in the Standard for Heat Detectors for Fire Protective Signaling Systems, UL 521, or the Standard for Lined Building Protection Fire Hose, ULC-530.

e) Carbon monoxide gas detectors intended for use in hazardous locations as defined in the U.S. Coast Guard Electrical Engineering Regulations.

1.6 A product that contains features, characteristics, components, materials, or systems new or different from those covered by the requirements in this standard, and that involves a risk of fire or of electric shock or injury to persons shall be evaluated using appropriate additional component and end-product requirements to maintain the level of safety as originally anticipated by the intent of this standard. A product whose features, characteristics, components, materials, or systems conflict with specific requirements or provisions of this standard does not comply with this standard. Revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation of this standard.