

Chapter 4

Fire Prevention Code

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Sec. 15-4-2 General Provisions.

[REDACTED]

(b) Application of Code.

(1) The provisions of this Chapter apply equally to new and existing conditions except that existing conditions not in strict compliance with the terms of this Chapter shall be permitted to continue

where the exceptions do not constitute a distinct hazard to life or property in the opinion of the Chief

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Sec. 15-4-5 Adoption of State Codes.

- (a) Except as otherwise specifically provided in this Chapter, the following orders, rules and regulations of the Department of Industry, Labor and Human Relations, as set forth in the Wisconsin Administrative Code, are adopted by reference and made a part of this Fire Prevention Code as if fully set forth herein. Any act required to be performed or prohibited by a statute incorporated herein by reference is required or prohibited by this Fire Prevention Code. Any future amendments, revisions or modifications of the Wisconsin Administrative Code are intended to be made a part of this Chapter and are hereby incorporated herein as if fully set forth.

- (b) Except as otherwise specifically provided, those portions of the National Fire Codes published by the NFPA, Boston, Massachusetts, and other codes and standards, as listed in the following pages, are hereby incorporated by reference and adopted as a part of this Fire Prevention Code. Any future amendments, revisions, or modifications of the NFPA Codes adopted herein are intended to be made part of this Chapter and are hereby incorporated as if fully set forth herein.
- (c) In the event that any of the foregoing Orders, Rules and Regulations of the Department of Industry, Labor and Human Relations or National Fire Code conflict with any provisions of this Chapter or with one another, the most strict shall apply.

[REDACTED]

Sec. 15-4-6 Automatic Fire Sprinkler Systems Required.

Approved automatic fire sprinkler systems shall be installed and maintained as follows:

[REDACTED]

- (f) **Nursing, Convalescent, Old Age, Prison, Group Care and Other Institutional Facilities.** Throughout all nursing, convalescent, old age, prison, and other group care or inscriptional facilities.

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- (h) **High Hazard Occupancies.** Throughout any building which by reasons of its construction, use or high combustible occupancy, involves a severe life hazard to its occupants, or which in the judgment of the Chief constitutes a fire hazard, including, but not limited to:
- (1) Aircraft hangers.
 - (2) Dry cleaning establishments using or storing gasoline or other volatile flammable liquids.
 - (3) Enameling or japanning operations.
 - (4) Mills, including sugar, starch, cereal, feed, flour and grist.
 - (5) Paint and varnish, including manufacturing, storing, handling, spraying and other related operations.
 - (6) Pyrozylin products, manufacture and storage.
 - (7) Repair garages.
 - (8) Smokehouses.
 - (9) Storage of explosive gases under pressure [fifteen (15) p.s.i. and over five thousand four hundred (5,400) cubic feet] such as acetylene, hydrogen, natural gas, etc.
 - (10) Storage of materials with a flash point under two hundred degrees Fahrenheit (200°F) such as celluloid products, kerosene, fuel oil, etc.
 - (11) Woodworking establishments.
 - (12) Chemical works.
 - (13) Explosives and pyrotechnics manufacturing.
 - (14) Oil refineries.
 - (15) Any other occupancies involving processing, mixing, storage and dispensing of volatile liquids.
- [REDACTED]

- (j) **Exceptions.** Automatic fire sprinkler systems shall not be required in:
- (1) **Certain Manufacturing Areas.** Rooms or building used for the manufacture or storage of aluminum powder, calcium carbide, calcium, metallic sodium or potassium, quick lime, magnesium powder, sodium peroxide or like materials where the application of water may cause or increase combustion.
 - (2) **Where Water Would Increase Hazard.** Any location where, in the sole discretion of the Chief, the use of water as a fire extinguishing agent would increase hazards or unduly expose equipment, machinery, or other chattel to damage or destruction provided, however, that an automatic fire suppression system using an extinguishing location is connected to an approved Central Station Monitoring service.
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

(a) **Installation Standards.**

- (1) Approved automatic fire sprinkler equipment shall be installed in accordance with the current editions of Pamphlet No. 13, "Standards for the Installation of Sprinkler Systems", and other applicable standards of the National Fire Protection Association.

(c) **Specific System Requirements.**

- (1) **System Drain.** The building automatic sprinkler system shall have a drain piped to the outside of the building or to a drain suitable to handle the required flows.
- (2) **Inspector's Test Valve.** The building automatic sprinkler system shall have an inspector's test valve piped so as to discharge to the outside of the building. The inspector's test valve shall be mounted at the most hydraulically remote location of the system. An orifice equal to the discharge of one (1) sprinkler alarm shall be tied into the building alarm system.
- (3) **Alarm Bell.** Alarm bells shall be installed on all alarm systems. One (1) bell shall be installed on the outside of the building. The sprinkler alarm shall be tied into the building alarm system.

Sec. 15-4-8 Alarm Systems (Fire and Smoke Detection).

- (b) **Where Required.** Smoke and heat detection systems shall be installed in all spaces in all buildings regardless of size or construction except for one (1) and two (2) family dwellings. The detection systems shall be in all spaces, including but not limited to hidden spaces (e.g., attics, crawlspaces, truss constructed areas), basements, storerooms, closets, occupied and unoccupied areas. One (1) and two (2) family dwellings shall have smoke detection systems as required by Wisconsin Administrative Code.

- (c) **Monitoring.** All detection systems shall be monitored by an approved central station monitoring service, except for one (1) and two (2) family dwellings.

(d) **Installation.**

- (1) All components of a fire or smoke detector system shall be listed by Underwriters Laboratories (UL) or the Factory Mutual System (FM). The entire installation shall conform to applicable provisions of NFPA Standards 71, 72A, 72C, 72D, or 72E, the National Electrical Code Article 760, and the Wisconsin Electrical Code.

- (3) A remote annunciator shall be provided at the main entrance of the building to indicate each of the designated alarm initiating zones via Red LED's which flash when in alarm and lock in upon acknowledging the alarm. The remote annunciator shall be electrically supervised from the main fire alarm control panel. Space shall be provided on the remote annunciator for custom zone labels. The zone labels shall plainly describe the location of the zones. Different occupancies in one (1) building shall be zoned separately.

(5) External devices:

- a. The system shall utilize UL or FM listed fire alarm initiating devices (pull stations, smoke detectors, heat detectors, water flow switches, duct detectors, etc.) and UL and FM listed fire alarm indicating devices (horns, bells, visual lights, etc.). Smoke detectors shall possess a Light Emitting Diode (LED) lamp to indicate either “ready” or “alarm” status.
- b. Smoke detectors (photoelectric, ionization) shall be installed approximately thirty (30) feet on center, located on the ceiling or wall of the protected area. Smoke detection shall be provided but not limited to the following areas: basements, common hallways, stairwells, sleeping rooms and all other rooms over fifty (50) square feet in size.
- c. Heat detectors shall be installed approximately thirty (30) feet on center, located on the ceiling of the protected area. Heat detection shall be provided but not limited to the following areas: furnace rooms, engine rooms, garages, hidden spaces and kitchens and all other rooms over fifty (50) square feet in area. Heat detectors shall also be installed as a substitution for smoke detectors in locations determined by the Fire Chief to be unsuitable for smoke detector installation.
- d. Horns/Bells:
 1. Alarm System Horns: Horns used as the audible alarm indicating appliance shall be twenty-four (24) volt direct current (DC) horns of metal construction with a minimum sound pressure output of eighty-seven (87) db at ten (10) feet. Fire alarm horns shall be UL or FM listed for fire alarm use. Horns shall be adaptable for surface or semi-flush mounting and be suitable for use within combination audio-visual systems.
 2. Alarm System Bells: Bells used as the audible alarm indicating appliance shall be twenty-four (24) volt DC bells of the vibrating or single stroke type with a minimum sound pressure output of ninety (90) db at ten (10) feet. Bells shall be suitable for surface or semi-flush mounting and be suitable for use within combination audio-visual systems.
 3. Visual Flashing Lamps: Visual indicating appliances shall be comprised of a strobe-type flash tube and be entirely solid state. These devices shall be UL or FFM listed and be capable of either ceiling or wall mounting. Visual units shall incorporate a built-in reflector to improve lighting characteristics. Visual units shall be incorporated as part of the horn or bell assembly.
 4. Horns, bells, or visual flashing lamps shall be installed in each unit, living space or tenant space in the building.

(e) **System Operation.**

- (1) Alarm initiating devices shall be grouped in zones identified by zone LED's on the control panel and at the remote annunciator.
- (2) Actuation of an alarm initiating device shall:
 - a. Cause the respective red zone alarm LED on the control panel to flash until the “acknowledge” switch is actuated at the control panel. Once acknowledged, the zone LED shall be constantly illuminated until the actuating device is restored to normal and the system is reset or equivalent operation.
 - b. The audible alarm indicating appliance shall sound throughout the entire facility until the system alarm acknowledge/silence switch is operated.
 - c. Visual indicating appliances shall flash until the acknowledge/silence switch is operated.
 - d. After the acknowledge switch is operated, subsequent activation of an initiating appliance shall cause the alarm bells or horns to resound, and the visual indicating appliances to flash.

- (3) Each alarm initiating circuit and indicating appliance circuit shall be electrically supervised. Any disarrangement of system wiring such as opens and grounds shall activate the audible and visual trouble indicators at the control panel. Actuation of the trouble silence switch shall silence the audible trouble indicator but the trouble LED shall remain lit. The trouble LED shall be non-canceling, except by an actual clearing of the trouble condition and restoring the trouble silence switch to normal.
- (4) The alarm system shall provide for the selection of:
 - a. Desire type of signal operation; alarm signal tempos, area selective codes, zone codes, general alarm codes and alarm silence inhibit.
 - b. UL or FM approved alarm verification operation.
 - c. Water flow/sprinkler supervisory operation on a distinct zone of the system.
- (5) Upon actuation of a smoke detector, the LED on the smoke detector shall remain constantly illuminated until the system is reset.

[REDACTED]

Sec. 15-4-9 Existing Buildings.

- (a) Except as hereinafter provided, automatic fire sprinklers, smoke detectors and standpipes need not be installed in buildings which existed or were under construction before this Chapter became effective unless such installation was required by a previous ordinance, administrative regulation, or state statute.
- (b) Where a building is expanded or remodeled and the building as remodeled or expanded is of a size, is of a type, or is for a use which, were the building then to be constructed, would be subject to the provisions of Sections 15-4-6, 15-4-8 and/or 15-4-10.
 - (1) The entire building (existing, new and remodeled areas) shall be made to conform to the requirements of Sections 15-4-6, 15-4-8 and 15-4-10 if more than fifty percent (50%) of the gross interior area of the building is remodeled or added to the building.

[REDACTED]

- (4) In determining the foregoing percentages successive additions, expansions, or remodeling, if made within a five (5) year period shall be aggregated and treated as a single expansion or addition.
- (c) Regardless of any percentage test set forth in Subsection (b), if the additional expanded, or remodeled area is of a size, is of a type, or is for a use which is subject to the provisions of Section 15-4-6, 15-4-8 and 15-4-10 the additional, expanded, or remodeled area must conform to the requirements of such Sections.
- (d) Where at the time of its construction a building or any part thereof is exempt from the requirements of Section 15-4-6 by reason of its proposed or intended use and subsequent to construction the use of such building or part thereof is changed in such a way that the reason for the exemption no longer exists, the entire building or area as the case may be shall be made to conform to the requirements of Section 15-4-6.
- (e) If the use of an existing building or structure is changed and the requirements for the new use are more stringent than those for the previous use, the building or structure shall be made to comply with the requirements for the new use as provided in this Chapter.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Sec. 15-4-16 High Rise Buildings.

[REDACTED]

(c) **Stairway Doors and Telephones.** Doors from stairways to floors may be locked only if provided with a remote release system from building control station. Stairways shall have a telephone or intercom to the building control station at least every five (5) floors, if kept located. Locks must release on power failure, with doors remaining unlocked.

[REDACTED]

(e) **Automatic Sprinkler and Standpipe Systems.**

- (1) An automatic sprinkler system shall be installed in accordance with NFPA 13.
- (2) A standpipe system shall be installed in accordance with NFPA 14.
- (3) Shut-off valves and water flow detection devices for the standpipe and sprinkler systems shall be provided for each floor.
- (4) Standpipe and sprinkler valves shall be supervised by a continuously manned station or central station.

(f) **Smoke/Heat Detection Systems.**

- (1) At least one (1) approved smoke detector, suitable for the intended use shall be installed:
 - a. Within every mechanical equipment, electrical transformer or control telephone equipment, elevator machine, or similar room.
 - b. Within the main return and exhaust air plenum of each air conditioning system and located in a serviceable area down stream of the last duct inlet.
- (2) These detectors shall activate an alarm or signaling system and shut down the ventilation system except where automatic smoke control is incorporated in the system.
- (3) Approved heat detection equipment shall be installed in boiler rooms and furnace rooms in lieu of smoke detection equipment.

[REDACTED]

[REDACTED]

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- (2) These detectors shall activate an alarm or signaling system and shut down the ventilation system except where automatic smoke control is incorporated in the system.
- (3) Approved heat detection equipment shall be installed in boiler rooms and furnace rooms in lieu of smoke detection equipment.

- (4) Alarm systems installed within such buildings shall conform to the Wisconsin State Electrical Code and one (1) of the following standards: NFPA 71, 72B, 72C, 72D.
- (5) Detectors shall conform to the Standards for Automatic Fire Detectors NFPA 72E. Alarm and Communications Systems.
- (6) The alarm and communications systems shall be designed and installed so that damage to any terminal unit or speaker will not render more than one (1) zone of the system inoperative.
- (g) **Voice Alarm System.**
 - (1) The operation of any smoke detector, water flow device or manual fire alarm station shall automatically sound an alarm signal to the desired areas, followed by voice direction to the occupant. The voice alarm and public address system may be a combined system. When approved, the Fire Department communications system may be combined with the voice alarm system and the public address system.
 - (2) The central control station shall contain controls for the voice alarm system so that a selective or general voice alarm may be manually initiated.
 - (3) The system shall be supervised to cause the activation of an audible trouble signal in the central control station upon interruption or failure of the audiopath including amplifiers, speaker wiring, switches and electrical contacts and shall detect opens, shorts and grounds which might impair the function of the system.
 - (4) The alarm shall be designed to be heard clearly by all occupants within the building or designated portions thereof as is required for the public address system.
- (h) **Public Address System.** A public address communications system designed to be clearly heard by all occupants of the building shall operate from the central control station. It shall be capable of directing message selectively or on a general basis to the following terminal areas:
 - (1) Elevators.
 - (2) Elevator lobbies.
 - (3) Corridors.
 - (4) Exit stairways.
 - (5) Rooms and tenant spaces exceeding one thousand (1,000) square feet in area.
 - (6) Dwelling units.
 - (7) Hotel guest rooms and/or suites.
- (i) **Fire Department Communications System.** A central control station for Fire Department operations shall be provided in a location approved by the Fire Department. This station shall contain:
 - (1) Voice alarm and public address system control panels.
 - (2) Two (2) way communications between the control stations and all elevators, elevator lobbies, exit access and stairways at each floor. The type of equipment proposed for this function shall be approved by the Fire Department.
 - (3) Fire detection and alarm system annunciator panels.
 - (4) Annunciator visually indication the location and status of each elevator.
 - (5) Status indicators and controls for air-handling systems.
 - (6) Controls for unlocking all stairway doors simultaneously.
 - (7) Sprinkler valve and water flow detector display panels.
 - (8) Standby power controls and status indicators.
 - (9) A telephone for Fire Department use with controlled access to the public telephone system.
 - (10) Manual override control for elevators.
 - (11) Small scale layout plan of building showing all permanent partitions, identifying permanent areas and doorways, exterior wall openings suitable for use in smoke ventilation, elevator locations and stair locations.
 - (12) Diagrams to indicate the location of the main shutoff for sprinkler or standpipe systems, electrical, water, gas and steam systems with an indication of the area(s) served by each of these main shutoffs.
 - (13) A list of names indicating all key building operating personnel and where they may be reached.
 - (14) An emergency plan of action for the building with personnel responsibilities defined.
- (j) **Standby Power and Lighting.**

- (1) An approved, permanently installed standby power generating system shall be provided. The system shall be equipped with suitable means for automatically starting the generator set upon failure of the normal electrical service and for automatic transfer and operations of the required electrical functions at full power within sixty (60) seconds of such normal service failure. System supervision with manual start and transfer features shall be provided at the central control station.
- (2) An on-premise natural gas fuel supply, or other fuel approved by the Department, sufficient for not less than twelve (12) hours full demand operation of the system shall be provided.
- (3) The power requirement shall be determined so as to provide service to, but not limited to:
 - a. Fire alarm system.
 - b. Exit and other emergency lighting.
 - c. Fire protection equipment.
 - d. Mechanical ventilation equipment.
 - e. Elevators.
 - f. Communications systems.
 - g. Maintenance: All communications, fire protection, detection and suppression systems required under this Section, shall be tested and maintained in an operable condition. All installed equipment required under this Section shall be maintained pursuant to the current standards of the National Fire Protection Association (NFPA). Floor level identification.
- (4) All stairways shall have each floor level or story identified on both sides of the door leading to the stairway as to its name or number with a permanent sign having letters or characters at least two (2) inches in height.
- (5) All elevators shall have each floor level or story identified on both sides of the door leading to the elevator shaft as to its name or number with a permanent sign having letters or characters at least two (2) inches in height.

[REDACTED]

[REDACTED]

[REDACTED]