

Chapter Ind 52

GENERAL REQUIREMENTS

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Ind 52.001 Design and supervision. (1) Every new building containing more than 50,000 cubic feet total volume, or addition to a building which by reason of such addition results in a building containing over 50,000 cubic feet total volume, or structural alteration to a building containing over 50,000 cubic feet total volume shall be designed by an architect or engineer in accordance with the provisions of this code; and shall be constructed under the supervision of an architect or engineer who shall be responsible for its erection in accordance with the plans and specifications of the designer. No change from the original plans and specifications shall be made except with the knowledge and consent of the designer, and as provided in Wis. Adm. Code section Ind 50.10.

(2) On completion of the construction, the supervising architect or engineer shall file a written statement with the department of industry, labor and human relations certifying that, to the best of his knowledge and belief, the construction has been performed in accordance with the plans and specifications approved by the department.

(3) No owner shall construct or alter any building, or portion of a building, or permit any building to be constructed or altered, except in accordance with the provisions of this section.

Note: By the term "architect" or "engineer" above is meant "registered architect" or "registered professional engineer", as defined in the Architects and Professional Engineers Registration Act, Section 101.31, Wis. Stats.

History: 1-2-56; cr. (2) Register, August, 1957, No. 20, eff. 9-1-57.

Ind 52.01 Fire prevention, detection and suppression. (1) **SPRINKLER SYSTEM.** A complete automatic sprinkler system, as specified in section Ind 51.23, shall be provided in every building more than 60 feet in height, the initial construction of which is commenced after July 2, 1974.

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(a) *Additions to existing buildings.* Building additions more than 60 feet in height shall have an automatic sprinkler system installed. The sprinkler protection shall be provided throughout the existing building unless the addition is separated from the existing building by a fire division wall as specified in subsection Ind 51.02 (13).

(b) *Substitute suppression systems.* When approved by the department, substitute automatic suppression systems may be used in lieu of a sprinkler system in areas where the use of water could cause unusual damage to equipment, or where water may have a limited effect or may be hazardous to use because of the nature of processes involved.

Note: The department will accept design and installation in accordance with the latest edition of the National Fire Protection Association standards for special extinguishing systems.

(c) *Alternate methods.* When approved by the department, alternate methods of fire prevention, detection and suppression may be provided in lieu of a complete automatic sprinkler system.

Note #1: The department will request a position statement regarding the proposed method to be submitted by the fire chief of the municipality wherein the building is located.

Note #2: The department will consider alternate methods of fire prevention, detection and suppression to include, but not limited to, fire-resistive construction, compartmentation, automatic detection systems, interior finish restriction, and partial sprinkler protection.

Note: Subsection Ind 52.01 (2) following is effective January 1, 1976.

(2) **ADDITIONAL REQUIREMENTS FOR HIGH-RISE BUILDINGS.** The following requirements apply to all buildings more than 100 feet in height or having more than 10 stories.

(a) *Smoke control.* Natural or mechanical ventilation for the removal of products of combustion shall be provided in every story and shall consist of one or more of the following methods. Controlling devices may be automatic or manual as approved by the local fire department.

1. Panels or windows in the exterior wall which can be opened from a location other than the fire floor. Such venting facilities shall be provided at the rate of at least 20 square feet per 50 lineal feet of exterior wall in each story, and distributed around the perimeter at not more than 50-foot intervals. Such panels shall be clearly identified as required by the fire department.

2. Openable windows in habitable rooms of residential units.

3. When an automatic sprinkler system is installed in compliance with section Ind 51.23, the mechanical air handling equipment may be designed to assist smoke removal. Under fire conditions, the return and exhaust air shall be taken directly to the outside without recirculation to other sections of the building.

4. A shaft through which smoke and heat can be mechanically vented to the outdoors shall be provided for each compartment or space enclosed with effective smoke barriers. The size of the shaft shall be uniform throughout and of such dimensions as to provide not less than 60 air changes per hour in the largest space served anywhere

in the compartment. Openings into the shaft shall be protected with a normally closed shutter located as high as possible and designed to vent the entire area.

5. Any other design which will produce equivalent results.

(b) *Exit stairways.* 1. All stairways shall be pressurized to at least 0.15 but not more than 0.50 inch of water column with all doors closed. Pressurization shall be activated by the fire alarm system, the detection systems, and the sprinkler system.

Note: The department will accept alternate designs which will produce equivalent results.

2. All stairway doors which are to be locked from the stairway side shall have the capability of being unlocked without unlatching upon a signal from the central control station.

(c) *Elevators.* There shall be provided at least one elevator suitable for fire department access to any floor. The elevator shall open into a lobby, which may serve other elevators, and the lobby at each level shall be separated from the remainder of the building by an effective smoke barrier.

Note: Refer to chapter Ind 4, Elevator Code, for additional requirements.

(d) *Fire alarm and detection system.* 1. A manual fire alarm box shall be located adjacent to exit doors into stairway shafts and in every elevator lobby.

2. An approved system which will provide for automatic detection of products of combustion other than heat shall be installed in every mechanical equipment room, unless sprinklered, and in the return air portion of every air conditioning and mechanical ventilation system that serves floors other than the floor on which the equipment is located.

a. Detectors shall be located at each opening into the vertical shaft.

b. The detectors shall actuate an alarm or signaling system and shut down the ventilation system except where automatic smoke control is incorporated in the system.

3. The manual alarm and automatic detection system shall conform to one of the following standards [Ind 51.27 (7a)]:

a. Standard for Central Station Protective Signaling Systems, NFPA No. 71;

b. Standard for Auxiliary Protective Signaling Systems, NFPA No. 72B;

c. Standard for Remote Station Protective Signaling Systems, NFPA No. 72C;

d. Standard for Proprietary Protective Signaling Systems, NFPA No. 72D.

(e) *Alarm and communication systems.* The following alarm and communication systems shall be provided:

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1. Voice alarm system. The detection system, sprinkler water flow device and the fire alarm system shall actuate a prerecorded message or voice alarm capable of being operated from the central control station on a general as well as a selective basis to the area involved. The alarm shall be designed to be heard by all occupants within the building or designated portions.

2. Voice communication system. There shall be a voice communication system between the central control station and the following areas:

a. Elevators, elevator lobbies, in stairways at every fifth floor, and all fire alarm operating stations.

b. Every office area exceeding 1,000 square feet in area.

c. Each dwelling unit and hotel guest room.

3. Fire department communication system. A system providing 2-way communication shall be provided at all floor levels, stairways, the central control station, and other locations required by the fire department.

a. The system shall be designed so the fire department communication system will override the other communication systems.

b. Wiring shall be arranged so that open circuits or short circuits on individual floors will not interfere with communications on another floor.

4. Combined system. When approved by the local fire department, the fire department communication system may be combined with the voice communication system and the voice alarm system.

(f) *Central control station.* A central control station for fire department operations shall be provided in a location approved by the fire department. It shall contain the voice communication systems panel; fire detection and alarm system panels; status indicators and controls for elevators, smoke venting and air handling systems; controls for unlocking stairway doors; a public telephone; sprinkler valve and water flow detectors; and standby power controls. All fire alarm and water flow signals shall be transmitted directly to the systems indicated in Ind 52.01 (2) (d) 3.

(g) *Standby power and light.* 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 operation of the required electrical functions at full power within 60 seconds of such normal service failure. System supervision with manual start and transfer features shall be provided at the central control station.

1. An on-premise fuel supply sufficient for not less than 2 hours full demand operation of the system shall be provided.

2. The power requirement shall be determined so as to provide service to, but not limited to the following:

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- a. Fire alarm system.
- b. Exit and other emergency lighting.
- c. Fire protection equipment.

Note: Service to fire pumps may be omitted if approved by the local fire department.

- d. Mechanical ventilation required by this section.
- e. Fire department elevator.
- f. Communication systems.

Note: The department promulgated emergency rules with an effective date of January 1, 1975, for a period of 120 days, to coincide with the date of the 1975 edition of the Wis. Adm. Code Building and Heating, Ventilating and Air Conditioning Code. These rules extend the coverage of the emergency rules, which expire May 1, 1975.

History: Emerg. cr. eff. 1-1-75; cr. (1), Register, April, 1975, No. 232, eff. 5-1-75; cr. (2), Register, April, 1975, No. 232, eff. 1-1-76.

Ind 52.02 Windows. (1) Every room in which one or more persons live, sleep, or are employed (except storage rooms or other rooms where the nature of the occupancy will not permit) shall be lighted by a window or windows opening directly upon a street or alley, or upon a court on the same lot with the building. The windows shall be so constructed and distributed as to afford light. Every building more than 40 feet deep (measuring at right angles to the windows) shall have windows on at least 2 sides.

Note: For windows and other outdoor openings used for natural ventilation, see Ind 59.24 (4) and Ind 57.19.

(a) The provisions for (1) may be waived for such occupancies as factory, office, mercantile, or educational facilities if provisions are made for artificial lighting as covered by Wis. Adm. Code Chapter Ind 19, Illumination.

1. Requirements applicable to schools or places of instruction shall be as stated in section Ind 56.05.

(2) Every building more than one story in height which does not have windows opening directly upon a street in each story above the first shall be provided with a suitable access for fire department use. Such access shall be a window or door opening through the wall on each floor above the first story. The opening shall be at least 36 inches in width and not less than 48 inches in height with the sill not more than 32 inches above the floor. The openings shall be so spaced that there will be one opening in each 100 feet of wall length in any accessible wall of the building. This requirement for access openings for fire department use shall not apply where a building is equipped throughout with an automatic sprinkler system approved for fire protection purposes.

History: 1-2-56; am. Register, December, 1962, No. 84, eff. 1-1-63; r. and recr. (1) (a), Register, October, 1967, No. 142, eff. 11-1-67; am. (1) (a) Register, May, 1971, No. 185, eff. 6-1-71; r. and recr., Register, September, 1973, No. 213, eff. 10-1-73.

Ind 52.03 Window cleaning. (1) Where the tops of windows to be cleaned are more than 20 feet above the floor, ground, flat roof, balcony, or permanent platform, one of the following means shall be provided to protect the window cleaners.

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(a) Approved attachments for window cleaner safety belts to which belts may be fastened at each end. Said attachments shall be permanent devices that shall be firmly attached to the window frame, or to the building proper, and so designed that a standard safety belt may be attached thereto; or

(b) An approved portable platform that is projected through the window or supported from the ground, floor, roof or platform level, for the window cleaner to stand upon and that is designed, constructed, maintained and equipped with handrail and toeboard in compliance with the requirements of chapter Ind 1, rules on Safety.

(c) A suspended scaffold, swinging scaffold, swinging chair scaffold, or boatswain's chair scaffold designed, constructed, equipped and maintained in compliance with the requirements of Wis. Adm. Code chapter Ind 35, rules on Safety in Construction, or

(d) Other equally effective devices.

(e) Where the window consists of a fixed panel not more than 24 inches in width alongside a removable panel, the fixed panel may be