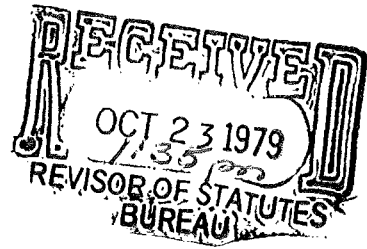


Ind 50 to 64



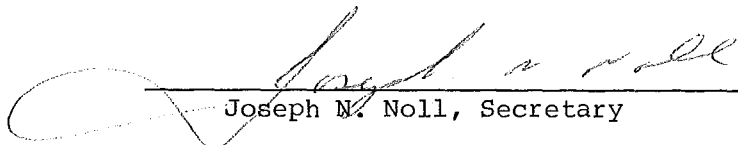
STATE OF WISCONSIN)
) SS
DEPARTMENT OF INDUSTRY,)
LABOR AND HUMAN RELATIONS)

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Joseph N. Noll, Secretary of the Department of Industry, Labor and Human Relations, and custodian of the official records of said department, do hereby certify that the attached rules to Wisconsin Administrative Code chapters Ind 50-64--Building and Heating, Ventilating and Air Conditioning Code, were adopted by this department on October 22, 1979.

I further certify that said copy has been compared by me with the original on file in this department and that the same is a true copy thereof and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the department at the Capitol, in the City of Madison, this 22nd day of October, A.D., 1979.



Joseph N. Noll, Secretary

ORDER OF

DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

Pursuant to authority vested in the Department of Industry, Labor and Human Relations by sections 101.01 to 101.211, Wis. Stats., the Department of Industry, Labor and Human Relations hereby amends, creates, repeals, repeals and recreates, and adopts rules of Wisconsin Administrative Code Chapters Ind 50-64--Building and Heating, Ventilating and Air Conditioning Code.

The rules attached hereto shall become effective January 1, 1980, as provided in section 227.026, Wis. Stats.

CHAPTER IND 50--ADMINISTRATION AND ENFORCEMENT

Ind 50.12 PLAN EXAMINATION AND APPROVAL.

Subsection Ind 50.12 (2) (c) 1. is amended to read:

1. ~~Approval is not required for the installation of air-cooling equipment when added to an approved heating system.~~ The addition of air-cooling equipment to an approved heating system requires department approval of energy conservation provisions.

Subsection Ind 50.12 (2) (k) is created to read:

(k) Illumination plans and electrical energy data.

Subsection Ind 50.12 (3) (intro. par.) is amended to read:

(3) Plans and specifications. At least 3 4 complete sets of plans, which are clear, legible and permanent copies, and one copy of specifications shall be submitted for examination and approval before commencing construction. The plans and specifications shall contain the following information:

Note: Also see section Ind 50.12 (5) (b) Note.

Subsection Ind 50.12 (3) (f) Note #5 is repealed.

Subsection Ind 50.12 (4) (b) is amended to read:

(b) ~~Thermal performance data.--Thermal performance calculations shall be submitted in accordance with the requirements of section Ind 63.12.~~ Energy conservation data. Calculations and specifications shall be submitted in accordance with section Ind 63.01.

Subsection Ind 50.12 (5) (b) Note is amended to read:

Note: A letter will be sent to the designer and the owner of record with a statement relating to the examination of the plans and citing the conditions of approval or denial. The plans will be dated and stamped "conditionally approved" or "not approved," whichever applies. At least 2 copies of the plans will be returned by the department. The department will retain one copy of the plans for all projects. The department will forward one copy of the plans for projects of less than 100,000 cubic feet and alterations of less than \$100,000 estimated cost to the state building inspector of record. The remaining plans will be returned to the person designated on the plans approval application.

CHAPTER IND 51--DEFINITIONS AND STANDARDS

Ind 51.01 DEFINITIONS.

Subsection Ind 51.01 (82) is amended to read:

(82) Mezzanine or mezzanine floor. An intermediate floor, either open or enclosed. Also see "Series Stories, Number of."

Ind 51.02 GENERAL REQUIREMENTS.

Subsection Ind 51.02 (2) (b) Note is created to read:

Note: See section Ind 64.41 (1) for requirements pertaining to combustible ceiling materials used in conjunction with air-handling plenums.

Subsection Ind 51.02 (6) (b) is repealed and recreated to read:

(b) Where combustible plastic is used in roof openings, the following limitations shall apply:

1. Polycarbonate material shall not exceed 30% of the roof area. All other plastic material shall not exceed 20% of the roof area.

2. No skylight, individual dome or group of domes constructed of polycarbonate material shall exceed 300 square feet. No skylight, individual dome or group of domes of other plastic material shall exceed 100 square feet.

3. Skylights, domes or groups of domes shall be separated from each other by at least 8 feet laterally and 10 feet along the slope of the roof.

Subsection Ind 51.02 (11) (a) is amended to read:

(a) In buildings ~~with 3 floor levels~~ having not more than 2 stories, the stairways in the upper 2 levels may be left open provided all stairways leading to the lowest level(s) are separated from the upper level(s) with fire-resistive rated construction as specified in Table 51.03-A or better. An open stairway is permitted between the first story and a floor level immediately below provided that all other stairways are enclosed at all other levels in accordance with section Ind 51.18. Openings in such enclosures shall be limited to exit doors serving public passageways and corridors and to access doors for mechanical and electrical components and equipment.

Subsection Ind 51.02 (11) (c) (intro. par.) is amended to read:

(c) A building having 3 or more ~~floor levels~~ stories may have an open interior stairway or floor opening connecting any 2 adjacent floors providing:

Subsection Ind 51.02 (13) is amended to read:

(13) Fire division walls. (a) Fire division walls shall have not less than a 4-hour fire-resistive rating as specified in section Ind 51.04 and shall comply with one of the following conditions:

~~(a)~~ 1. The wall shall extend 3 feet above the roof.

~~(b)~~ 2. The wall shall connect and make tight contact with roof decks of at least 2-hour fire-resistive noncombustible construction on both sides of the wall.

(e) 3. The wall shall connect and make tight contact with roofs of noncombustible construction on both sides of the walls, and the roofs shall be noncontinuous at the wall.

Note: Built-up roofs, including those having class A rating, are considered combustible and do not meet the requirements of this section.

(b) Structural members shall not continue through or over the fire wall.

Subsection Ind 51.02 (19) is amended to read:

(19) Attic compartmentalization. Attics of combustible construction, ~~other than those above-suspended-ceilings,~~ shall be divided into areas not greater than 3,200 square feet by firestopping as specified in section Ind 53.63 (1) (c). Compartmentalization shall extend into the eave and soffit areas to provide a complete separation between compartments. Panels for access openings in compartment walls shall be equipped with self-closing devices and shall normally be kept closed.

Ind 51.03 CLASSES OF CONSTRUCTION STANDARDS.

Section Ind 51.03, Table 51.03-A, footnote (h) is amended to read:

(h) Approved fire-retardant treated wood ~~satisfying the definition for "noncombustible"~~ ~~[Ind 51.01-(86)-(e)]~~ will be accepted in place of the 3/4-hour fire-resistive ratings.

(Note to Revisor: The original of Table 51.03-A showing the amendment will be provided.)

Subsection Ind 51.03 (1) (d) 1. is amended to read:

1. Doors leading into main public corridors other than rated exit corridors shall be noncombustible or 20-minute fire door assemblies as specified in section Ind 51.047, or equivalent, unless otherwise specified above.

Note: Public corridors are intended to include principal corridors serving a floor and leading directly to building exits, but do not include communicating passageways within a given use area.

Subsection Ind 51.03 (2) (e) 1. is amended to read:

1. Doors leading into main public corridors other than rated exit corridors shall be noncombustible or 20-minute fire door assemblies as specified in section Ind 51.047, or equivalent, unless otherwise specified above.

Note: Public corridors are intended to include principal corridors serving a floor and leading directly to building exits, but do not include communicating passageways within a given use area.

Subsection Ind 51.03 (5) (a) 3. is created to read:

3. Light panels of combustible materials may be used in exterior walls requiring NC-0 hour rating up to a limit of 10% of the surface area within any 100 lineal feet of the building. The bottom of the panels shall be at least 12 feet above grade. Such panels will be included in the decorative trim allowance permitted by section Ind 51.02 (15).

Subsection Ind 51.03 (5) (g) (intro. par.) is amended to read:

(g) A mansard shall be constructed entirely of noncombustible material or fire-retardant treated wood ~~satisfying the definition of "noncombustible"~~ if it is subject to one of the following conditions:

Subsection Ind 51.03 (6) (a) 3. is amended to read:

3. ~~Panels~~ Light panels of combustible materials may be used in exterior walls requiring NC-0 hour rating up to a limit of 10% of the surface area within any 100 lineal feet of the building. The bottom of the panels shall be at least 12 feet above grade. Such panels will be included in the decorative trim allowance permitted by section Ind 51.02 (15).

Ind 51.047 FIRE-RATED DOOR ASSEMBLIES IN FIRE-RATED CONSTRUCTION.

Subsection Ind 51.047 (2) (a) is created to read:

(a) Labeled fire-door assemblies shall not be modified without written acceptance from the testing laboratory.

Ind 51.049 MISCELLANEOUS OPENINGS IN FIRE-RATED CONSTRUCTION.

Section Ind 51.049 (3) is created to read:

(3) Plastic plumbing and electrical system components. Penetration of required fire-resistive rated floor, wall and roof assemblies by plastic plumbing and electrical system components shall be in accordance with one of the following:

(a) A device or system tested and listed by an approved testing laboratory.

(b) For plastic plumbing pipes, substitute a steel or cast iron pipe where it penetrates the fire-rated assembly and extend it for a distance of at least 10 inches beyond both faces of the assembly.

(c) Provide a 10-gauge steel sleeve one inch larger in diameter than the plastic plumbing pipe or electrical wiring and extending 10 inches beyond both faces of the assembly. The annular space between the plastic component and protective sleeve shall be packed with an inorganic filler.

(d) Wrap the plastic component for a distance of at least 3 feet from both faces of the fire-rated assembly with at least one inch of inorganic insulating material. The inorganic insulation material shall be mechanically attached to the plastic component.

Ind 51.15 STANDARD EXIT.

Subsection Ind 51.15 (3) (b) 1. Note is amended to read:

Note: The intent of this rule is to prohibit padlocks or use of a key to open a door or lock at any time. The bar and bolt exception is to give added security against intruders from the outside while protecting persons in the building from being ~~trapped~~ trapped.

Subsection Ind 51.15 (4) is amended to read:

(4) A standard exit doorway shall not be less than 6 feet 4 inches high by 3 feet 4 0 inches wide, except where especially provided under occupancy classifications and in ~~Wis.-Adm.-Code~~ section Ind 51.20. Where double doors are provided with or without mullions, the width of each single door may be reduced to 2 feet 6 inches, except double doors utilized to provide accessibility in accordance with section Ind 52.04 shall have the width of at least one single door increased to 2 feet 8 inches.

Ind 51.16 STAIRWAYS.

Subsections Ind 51.16 (5), (6) and (7) are repealed.

Subsection Ind 51.16 (8) is renumbered 51.16 (5).

Subsection Ind 51.16 (9) is renumbered 51.16 (6).

Subsection Ind 51.16 (10) is renumbered 51.16 (7) and amended to read:

(7) Spiral stairs. Spiral stairways may be permitted as specifically allowed by the occupancy chapters of this code. Such spiral stairs shall ~~be-at-least-22-inches in-width~~ provide a clear walking area measuring at least 22 inches from the outer edge of the supporting column to the inner edge of the handrail and shall have treads at least 7 inches in width at a point one foot from the narrow end of the tread, and a uniform riser height of not more than 8 inches.

Section Ind 51.161 is created to read:

Ind 51.161 HANDRAILS. (1) Where required. Handrails shall be provided in all of the following conditions unless otherwise specified in the occupancy chapters of this code.

(a) On the left side, as one mounts the stairs, on all interior stairways of more than 3 risers.

(b) On the open side of any stairway with more than 3 risers.

(c) On both sides of interior stairways 5 feet or more in width.

(d) To divide interior stairways more than 8 feet wide into widths at least 3 feet 8 inches but less than 8 feet.

(e) On both sides of exterior stairways with more than 3 risers, which are an integral part of the building.

(f) To divide exterior stairways which are an integral part of the building and more than 25 feet wide into approximately equal widths not less than 3 feet 8 inches but not greater than 25 feet.

(g) On interior and exterior ramps having a slope greater than one foot of rise in 20 feet of run in accordance with the requirements specified in (a) through (f) of this subsection.

1. Exception. For ramps used to provide barrier-free access, see section Ind 52.04 (7) (c).

(h) On fire escapes as specified in section Ind 51.20 (8).

(2) Loading. All handrails shall be designed and constructed to withstand a load of 200 pounds applied in any direction at any point.

(3) Height. Handrails, except those serving fire escapes, shall be not less than 30 inches nor more than 34 inches above the nosing of the treads on stairways or above the surface of ramps.

Note: See section Ind 51.20 (8) for handrail requirements for fire escapes.

(4) Continuity and extensions. Handrails shall be continuous for the full length of the stairway or ramp and one handrail shall extend at least 12 inches beyond the top and bottom riser or ramp end and shall not constitute a projecting hazard.

(5) Clearance. Handrails shall provide a clearance of at least 1-1/2 inches between the handrail and the wall to which it is fastened.

(6) Openings below top rail. (a) Handrails protecting the open sides of stairways and ramps subject to use by children shall have intermediate rails or an ornamental pattern designed to prevent the passage of an object with a diameter larger than 9 inches.

(b) Handrails protecting the open sides of stairways and ramps not subject to use by children (i.e., waste water treatment plants, foundries, tanneries and other industrial occupancies) shall be provided with an intermediate rail at mid height or equivalent.

Section Ind 51.162 is created to read:

Ind 51.162 GUARDRAILS. (1) Where required. Guardrails shall be provided in all of the following conditions unless otherwise specified in the occupancy chapters of this code:

(a) On the open side of elevated platforms, landings, walks, balconies and mezzanines which are more than 24 inches in height.

(b) On bleachers and grandstands as specified in section Ind 55.55 and as indicated in (5) of this section.

(c) On open parking structures as specified in section Ind 62.28 and as indicated in (5) of this section.

(d) On openings through floors and roofs.

(2) Exempt locations. Guardrails need not be provided on the loading side of loading docks.

(3) Loading. All guardrails shall be designed and constructed to withstand a load of at least 200 pounds applied in any direction at any point.

(4) Height. Guardrails shall be not less than 3 feet 6 inches in height.

(a) Exception #1. Guardrails within individual living units may be 36 inches in height.

(b) Exception #2. Guardrails on a balcony immediately in front of the first row of fixed seating and which are not at the end of an aisle may be 36 inches in height.

(5) Openings below top rail. (a) Guardrails in areas subject to use by children shall have intermediate rails or an ornamental pattern designed to prevent the passage of an object with a diameter larger than 9 inches.

(b) Guardrails in areas not subject to use by children shall be provided with an intermediate rail at mid height or equivalent.

Section Ind 51.163 is created to read:

Ind 51.163 TOEBOARDS. A toeboard shall be provided at exposed edges of all elevated platforms, walks, balconies, mezzanines, ramps and floor openings to prevent the fall of materials. The toeboard shall extend 4 inches above the finished floor. Where material is stockpiled to a height where the toeboard does not provide adequate protection, additional measures shall be taken to prevent the fall of materials.

Note: Toeboards are not required on stairways or ramps and landings or platforms in connection with them.

Section Ind 51.164 is created to read:

Ind 51.164 HEADROOM. (1) Every means of egress shall be provided with a headroom clearance of not less than 6 feet 8 inches. In stairways, the clearance shall be 7 feet 0 inches established by measuring vertically from the edge of the tread nosing to the ceiling or soffit above the tread nosing.

(a) Exception. The headroom clearance for stairways in apartments, row houses and townhouses may be reduced to not less than 6 feet 8 inches.

Ind 51.18 INTERIOR ENCLOSED STAIRWAY.

Subsection Ind 51.18 (2) is amended to read:

(2) The enclosure shall include at each floor level a portion of such floor which will be at least as wide as the stairway; and such enclosure shall also include the passageway of the first floor level (if any) leading from the stairway to an outside door, so as to afford uninterrupted passage from the uppermost floor to such outside door without leaving the enclosure. Openings in the stairway enclosure shall be limited to exit doors serving public passageways or corridors and to access doors for mechanical and electrical components and equipment.

Ind 51.19 HORIZONTAL EXIT.

Subsection Ind 51.19 (1) is amended to read:

(1) General. A horizontal exit shall consist of one or more openings through an occupancy separation; a 2-hour fire-rated separation wall extending from the basement or lowest floor to the underside of the roof deck ~~rated in accordance with line 20 of table 51.03-A;~~ or of one or more bridges or balconies connecting 2 buildings or parts of buildings entirely separated by occupancy separations as described in section Ind 51.08.

Subsection Ind 51.19 (2) (a) 1. a. is repealed.

Subsection Ind 51.19 (2) (a) 1. b. is renumbered 51.19 (2) (a) 1. a.

Subsection Ind 51.19 (3) is amended to read:

(3) Ramp slope. Where there is a difference of elevation between connected areas, the difference shall be overcome by a ramp with a slope of not more than one foot in ~~6~~ 8.

Ind 51.20 FIRE ESCAPES.

Subsection Ind 51.20 (8) (intro. par.) is amended to read:

(8) Railings. A railing at least 42 inches in height ~~and having 2 intermediate rails, uniformly spaced,~~ measuring vertically from the floor of the platform, shall be provided on all open sides of platforms. Railings at least 36 inches in height, measuring vertically from the nose of the treads, shall be provided on the open sides of all stairways and on both sides of balanced stairways. Either a railing or a hand-rail fastened to the wall shall be provided on each side of all "B" fire escape stairways. Railings on fire escapes subject to use by children shall have intermediate rails or an ornamental pattern designed to prevent the passage of an object with a diameter larger than 9 inches. Railings on fire escapes not subject to use by children shall be provided with 2 uniformly spaced intermediate rails.

Ind 51.24 FIRE ALARM SYSTEMS.

Section Ind 51.24 (intro. par.) is amended to read:

Ind 51.24 FIRE ALARM SYSTEMS. Interior fire alarm systems required under ~~Wis. Adm. Code~~ sections Ind ~~54.19~~ 54.17, 56.19 and 57.22 shall be designed and constructed in conformity with the following requirements:

Subsection Ind 51.24 (3) (a) is repealed.

Subsection Ind 51.24 (4) is amended to read:

(4) Operating stations shall be prominently located in an accessible position at all required exit doors and required exit stairways. Operating stations shall be of an approved type and shall be conspicuously identified. All such operating stations shall be of a type which, after being operated, will indicate that an alarm has been sent therefrom until reset by an authorized means. (Operating stations having a "Break Glass" panel will be acceptable. On coded systems having a device to permanently record the transmission of an alarm, "Open Door" type stations may be used.) The fire alarm operating stations shall be mounted not less than 4 3 feet nor more than 5 4 feet above the finished floor as measured from the floor to the center of the box.

Ind 51.26 ADOPTION OF ACI STANDARDS.

Subsections Ind 51.26 (intro. par.) and (1) are amended to read:

Ind 51.26 ADOPTION OF ACI STANDARDS. Pursuant to section 227.025, ~~Wis. Stats.~~, the attorney general and the revisor of statutes have consented to the incorporation by reference of the following standards of the American Concrete Institute (ACI), P.O. Box ~~4754~~ 19150, ~~Redford Station~~, Detroit, Michigan 48219. Copies of the standards in reference are on file in the offices of the department, the secretary of state, and the revisor of statutes.

- (1) BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI ~~318-71~~ 318-77.

Ind 51.27 ADOPTION OF MISCELLANEOUS STANDARDS.

Subsections Ind 51.27 (2), (6), (7a), (9) and (10) are amended to read:

(2) American Institute of Steel Construction, ~~1221-Avenue-of-the-Americas, New-York, N.Y., 10020~~ 400 North Michigan Ave., Chicago, Illinois 60611, SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, ~~February-12, 1969~~, November 1, 1978; and COMMENTARY ON THE SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, ~~February-12, 1969~~ November 1, 1978.

(6) American Welding Society, 2501 NW 7th Street, Miami, Florida 33125, STRUCTURAL WELDING CODE, AWS D-1.1-72 D 1.1-79; SPECIFICATION FOR WELDING SHEET STEEL IN STRUCTURES, AWS D 1.3-78.

(7a) National Fire Protection Association, 470 Atlantic Avenue, Boston, Mass. 02210, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, NFPA No. 13-1974; STANDARD FOR THE INSTALLATION OF CENTRIFUGAL FIRE PUMPS, NFPA No. 20-1974; STANDARD FOR WATER TANKS FOR PRIVATE FIRE PROTECTION, NFPA No. 22-1974; STANDARD FOR OUTSIDE PROTECTION, NFPA No. 24-1973; STANDARD FOR THE INSTALLATION OF OIL-BURNING EQUIPMENT, NFPA No. 31-1978; NATIONAL FUEL GAS CODE, NFPA No. 54-1974; STANDARD FOR CENTRAL STATION PROTECTIVE SIGNALING SYSTEMS, NFPA No. 72B-1974; STANDARD FOR REMOTE STATION PROTECTIVE SIGNALING SYSTEMS, NFPA No. 72C-1974; STANDARD FOR PROPRIETARY PROTECTIVE SIGNALING SYSTEMS, NFPA No. 72D-1974; STANDARD ON AUTOMATIC FIRE DETECTORS, NFPA No. 72E-1974; STANDARD FOR CHIMNEYS, FIREPLACES AND VENTS, NFPA No. 211-1977.

(9) Steel Joist Institute, ~~2001-Jefferson-Davis-Highway, Arlington, Virginia 22202~~, 1703 Parnum Blvd., Suite 204, Richmond, Virginia 23229, STANDARD SPECIFICATIONS AND LOAD TABLES, 1973 STANDARD SPECIFICATIONS, LOAD TABLES AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS, 1979.

(10) Truss Plate Institute, Inc., ~~7411-Riggs-Road, Hyattsville, Maryland-20783~~, 1800 Pickwick Ave., Glenview, Illinois 60025, DESIGN SPECIFICATION FOR METAL PLATE CONNECTED WOOD TRUSSES, TPI-78.

CHAPTER IND 52--GENERAL REQUIREMENTS

Ind 52.02 WINDOWS.

Subsection Ind 52.02 (1) (b) is created to read:

(b) Exception. Hotel and motel rooms and similar sleeping rooms in buildings accommodating transients need not be provided with openable windows provided the rooms have clear glazed panels facing naturally lighted pool or recreation areas. The rooms shall be provided with mechanical ventilation supplying at least 5 CFM of tempered outside air per occupant.

Ind 52.04 REQUIREMENTS FOR BARRIER-FREE ENVIRONMENTS.

Subsection Ind 52.04 (1) Note is created to read:

Note: Owners intending to utilize federal funds for buildings may have to comply with other requirements in addition to those outlined herein, such as the latest revised ANSI A 117.1, Specification for Making Buildings and Facilities Accessible To, and Usable By, the Physically Handicapped.

Subsection Ind 52.04 (3) is repealed and recreated to read:

(3) Site requirements. A means of access shall be provided from an ancillary parking facility, street or alley to the building.

Note: Section 66.616, Stats., requires curb ramps for persons with physical disabilities at intersection crosswalks on any city or village street, connecting street, or town road provided with curbs and sidewalks.

(a) Parking spaces. Where parking spaces are provided, accessible parking spaces shall be designated and provided at the rate of 2% of the total number of parking spaces provided, with a minimum of one.

1. Width. Parking spaces shall be at least 12 feet wide.

2. Identification. Exterior signs or symbols shall identify all accessible parking spaces and shall direct persons from the accessible parking space(s) to the accessible entrance(s). The signs shall comply with the requirements of Ind 52.04 (9) (c).

3. Location. All accessible parking spaces shall be located as close as possible to an accessible entrance(s). Parking spaces in a parking ramp shall be located as close as possible to the main entrance of the parking ramp, to an adjacent accessible public walk, or to an accessible elevator.

(b) Curb ramps. Where accessible walks cross driveways, parking facilities, streets or alleys, curb ramps shall be used to provide a means of access.

1. Slope. Curb ramps shall have a slope of not more than one inch of rise in 12 inches. Sides of ramps shall be sloped to adjacent terrain or sidewalk. The lower edge of the curb ramp shall be level with the road.

2. Width. Curb ramps shall be a minimum of 40 inches in width.

3. Handrails. Handrails shall not be required for curb ramps which overcome a difference in elevation of 8 inches or less.

4. Location. Curb ramps shall be located to provide the shortest line of travel from the accessible parking space(s) to the accessible public entrance.

(c) Exterior walks. Exterior walks leading to accessible entrances shall comply with the following:

1. Width. Walks shall have a slip-resistant surface and shall be at least 48 inches wide.

2. Gradients. Walks shall have a side slope not greater than 2.5% (1/4 inch per foot). Walks with a gradient greater than 5% (1:20), but less than 8.3% (1:12), shall be provided with rest platforms at 30-foot intervals and shall have a handrail on one side of the walk. Walks with a gradient of 8.3% (1:12) shall comply with the requirements for ramps [Ind 52.04 (7)].

3. Handrails. Handrails shall be provided at walks where the adjacent terrain exceeds a 25% (1:4) downward slope away from the walk.

Note: The requirements for accessible walks are not intended to apply to public walks controlled by city datum, nature trails, or walks not required by this code.

(d) Communication between buildings or properties. Walks or enclosed passageways which connect 2 or more properties or buildings and are intended for public use shall provide access to each building or property.

Subsection Ind 52.04 (4) (b) Note is amended to read:

Note: Where elevators are provided, the department recommends that elevator control buttons and emergency call systems be located at a height from 35 inches to 48 inches from the floor. The elevator call buttons in the lobbies should be placed at a height of 42 inches from the floor. ~~Raised lettering is recommended to identify the elevator call buttons and control buttons.~~ (Refer to chapter Ind 4, Elevator Code, for additional requirements.)

Subsection Ind 52.04 (4) Table 52.04, category VII. D. of the table and footnotes 1, 10 and 14 are amended to read: (see following pages for complete table and footnotes)

Occupancy and Type of Construction	Access to Primary Floor	Interior Circulation	Toilet Facilities
VII. Places of abode			
D. Condominiums	Yes ¹⁵	Yes ¹⁶	Yes ¹⁰

¹ ~~(a) All buildings. Access is not required to a mezzanine if duplicate facilities to those provided on the mezzanine are located on an accessible floor. Access is required to all special facilities for the employees such as, but not limited to, lunchrooms, change rooms and locker rooms. (b) (a) Buildings having area 20,000 square feet or less. If the total gross area of the building, including all floors, is 20,000 square feet or less, interior circulation is required to a primary floor and throughout at least 2/3 of that floor area. Access is not required to a mezzanine if duplicate facilities to those provided on the mezzanine are located on an accessible floor. Access is required to any raised or depressed area of the primary floor containing the only facility of its kind. Access is required to employe facilities (i.e., lunch rooms, change rooms and locker rooms) required by section Ind 54.13. (c) (b) Buildings having area greater than 20,000 square feet. If the total gross area of the building, including all floors, is greater than 20,000 square feet, interior circulation is required to all floors, including mezzanines, and to at least 2/3 of the total area of each floor. Access is required to any floor level containing the only facility of its kind.~~

TABLE 52.04
REQUIREMENTS FOR NEW CONSTRUCTION

Occupancy and Type of Construction	Access to Primary Floor	Interior Circulation	Toilet Facilities
I. All public buildings and places of employment not listed in categories II-XII.	Yes	Yes ¹	Yes
II. Government-owned buildings, except those occupancies listed under V and IX. D.	Yes	Yes	Yes
III. Factories, office and mercantile buildings. .	Yes	Yes ¹	Yes ²
IV. Theaters and assembly halls			
A. Churches (Ch. Ind 54 and 55)	Yes ³	Yes ¹ , 5	Yes ⁴
B. Auditoriums, theaters, stadiums and permanent bleachers.	Yes	Yes ¹ , 5	Yes
C. Night clubs, bars, restaurants (Ch. Ind 54 and 55).	Yes	Yes ¹	Yes
D. Recreational facilities (Ch. Ind 54 & 55) ⁶	Yes	Yes	Yes
V. Schools and other places of instruction . . .	Yes	Yes ¹ , 7	Yes
VI. Libraries, museums and art galleries.	Yes	Yes ¹	Yes
VII. Places of abode			
A. Residential living units with individual exterior entrances	Yes ⁸	Yes ⁹	Yes ¹⁰
B. All other residential living units (apartment-type buildings)	Yes ¹¹	Yes ¹²	Yes ¹⁰
C. Hotels and motels.	Yes	Yes ⁷ , 13	Yes ¹⁴
D. Condominiums	Yes ¹⁵	Yes ¹⁶	Yes ¹⁰
VIII. Day care centers ¹⁷	Yes	Yes ¹	Yes
IX. Health care facilities			
A. Hospitals ¹⁸	Yes	Yes	Yes
B. Nursing homes ¹⁸	Yes	Yes	Yes
C. Community-based residential facilities ¹⁹ .	Yes	Yes	Yes
D. Dental and medical clinics and offices . .	Yes	Yes ¹ , 20	Yes
X. Places of detention	Yes	Yes ¹ , 21	Yes
XI. Garage occupancies.	Yes	Yes ¹	Yes
XII. Specialty occupancies			
A. Open parking structures ²²	Yes	Yes	Yes
XIII. Mechanical equipment rooms, maintenance equipment and other storage rooms, janitor closets, storage warehouses, saw and feed mills, motion picture booths, portable bleachers and similar occupancies determined by the department	No	No	No

Note: Floors used entirely for storage or mechanical purposes need not be included in determining the total gross area.

Footnotes of Table 52.04:

¹(a) Buildings having area 20,000 square feet or less. If the total gross area of the building, including all floors, is 20,000 square feet or less, interior circulation is required to a primary floor and throughout at least 2/3 of that floor area. Access is not required to a mezzanine if duplicate facilities to those provided on the mezzanine are located on an accessible floor. Access is required to any raised or depressed area of the primary floor containing the only facility of its kind. Access is required to employe facilities (i.e., lunch rooms, change rooms and locker rooms) required by section Ind 54.13. (b) Buildings having area greater than 20,000 square feet. If the total gross area of the building, including all floors, is greater than 20,000 square feet, interior circulation is required to all floors, including mezzanines, and to at least 2/3 of the total area of each floor. Access is required to any floor level containing the only facility of its kind.

Footnotes of Table 52.04 (cont.)

- ²If the required toilet facilities in buildings accommodating 15 or less employees and 25 or less patrons are not accessible, one additional accessible toilet room for both sexes shall be provided. That toilet facility shall be located on an accessible floor and shall contain one lavatory and one water closet. A privacy lock for the door shall be provided.
- ³If remodeling or adding, or both, involves an entrance or exit and constitutes less than 25% of the total square footage, access is not required to a primary floor.
- ⁴In remodeled churches, a separate accessible toilet room for use by both sexes will be acceptable providing the toilet room is located on an accessible floor, contains one lavatory and one water closet, and is provided with a privacy lock.
- ⁵Seating spaces, at the rate of 5% of the total capacity, with a maximum of 30 spaces required, shall be integrated throughout the seating plan. One-half of the accessible seating spaces shall be designed for patrons using wheelchairs and shall be located on level grade; the other half of the accessible seating spaces shall be designed for patrons using braces, crutches or similar aids. Ramp details [Ind 52.04 (7)] do not apply to the aisles in theater auditoriums.
- ⁶In buildings containing recreational facilities, access shall be provided to 10% of the individual game areas (i.e., bowling alleys, tennis courts and similar areas), with a minimum of one. Access shall be provided to toilets, lounge areas, bar and dining areas and to the only facility of its kind of a similar nature. Access is not required to saunas, racquet ball courts, handball courts and locker rooms associated with those areas.
- ⁷Interior circulation shall be provided to any level containing the only facility of its kind.
- ⁸Access shall be provided to at least 10% of the living units, with a minimum of one. In a complex of buildings, the accessible units shall be integrated throughout at least 50% of the buildings in the complex.
- ⁹All doors throughout the accessible living units shall be at least 32 inches wide. All corridors within the accessible living units shall be at least 36 inches wide.
- ¹⁰Grab bars, special lavatories, water closets, mirrors, or special bathing facilities are not required.
- ¹¹Access shall be provided to a primary floor with living units. In a complex of buildings, access shall be provided to at least 50% of the buildings in the complex.
- ¹²Interior circulation within all living units on the accessible floor shall be accomplished through the use of doors at least 32 inches wide. All corridors needed to provide accessibility shall be at least 36 inches wide. If laundry or storage facilities, or both, are provided in buildings with more than 20 living units per building, the laundry or storage facilities, or both, shall be accessible.
- ¹³Accessible sleeping units shall be provided at a rate of 10% of the total number of units, with a minimum of one. Doors at least 32 inches wide are required throughout the accessible living units. All corridors within the accessible living units, or needed to provide accessibility, shall be at least 36 inches wide.
- ¹⁴Accessible bathtubs or showers shall be provided and shall comply with section Ind 57.26 (3) (a) or (b). Self-rising toilet seats and sliding-door tub enclosures are prohibited.
- ¹⁵Condominiums, 2 stories or less in height, are exempt from the accessibility requirements relating to parking spaces, ramps and grade-level entrances.
- ¹⁶All doors throughout all condominium living units shall be at least 32 inches wide. All corridors shall be at least 36 inches wide.
- ¹⁷Access, interior circulation, and toilet facilities do not apply to a change of use.
- ¹⁸See section Ind 57.26 for additional requirements on accessibility.
- ¹⁹For community-based residential facilities within the scope of chapter Ind 61, see section Ind 61.18 for additional requirements; for community-based residential facilities within the scope of chapter Ind 57, common-use areas and 10% of the sleeping rooms shall be accessible.
- ²⁰If the total gross area of the building, including all floors, is less than 20,000 square feet, interior circulation is required to all the medical and dental areas, or both, used by the patients. All one-of-a-kind facilities provided for the employees shall be located on an accessible floor.
- ²¹In penal institutions, 10% of the total number of required institutional living units shall be accessible. Vertical transportation between tiers of cells is not required.
- ²²See section Ind 62.34 for additional requirements.

¹⁰ Grab bars, special lavatories, water closets, mirrors, or special bathing facilities are not required.

¹⁴ Accessible bathtubs or showers shall be provided and shall comply with section Ind 57.26 (3) (a) or (b). Self-rising toilet seats and sliding-door tub enclosures are prohibited.

Subsection Ind 52.04 (5) (b) is amended to read:

(b) Buildings of 20,000 square feet or less. Multiple-use buildings with a total gross area of 20,000 square feet or less, including all floors, shall be provided with a means of access to and throughout at least 2/3 of the total area of the primary and to the toilet facilities on the primary floor. Government-owned buildings and dental and medical clinics and offices shall comply with the criteria established in Table 52.04 for each specific use.

Note: Floors used entirely for storage or mechanical purposes need not be included in determining the total gross area.

Subsection Ind 52.04 (8) is repealed and recreated to read:

(8)* Toilet facility details. (a) Accessible toilet rooms and compartments. Accessible toilet rooms and toilet compartments shall be sized to provide ease of access, usability and uninterrupted mobility. Fixtures, doors and other obstructions shall be arranged to ensure accessibility.

(b) Single-fixture toilet rooms. Single-fixture toilet rooms containing one water closet and one lavatory shall be designed to provide the minimum space requirements as shown in diagram A, diagram B, or as approved by the department.

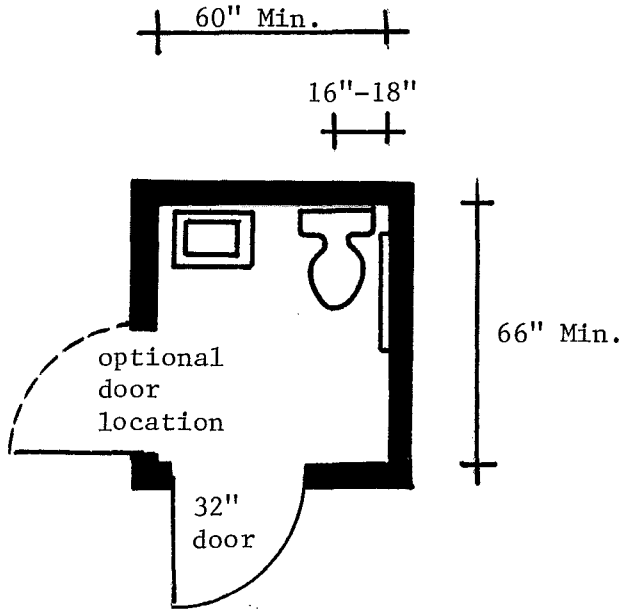


Diagram A

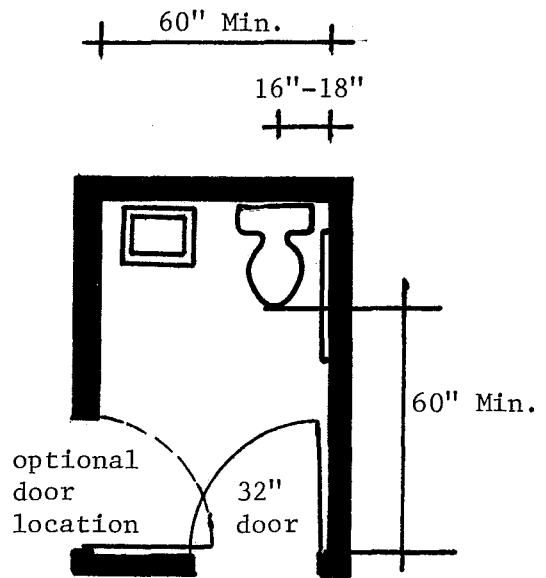


Diagram B

(c) Water closet compartments. Accessible water closet compartments shall be designed in accordance with the minimum design standards as established in Table 52.04-A, or as approved by the department. Sufficient clearance must be maintained to permit the door to the toilet room compartment to open at least 95 degrees.

Note: The water closet compartment specifications contained in Table 52.04-A do not apply to toilet rooms containing one water closet and one lavatory; or to bathrooms containing a water closet, a lavatory and a bathing facility. See the appendix for examples of accessible toilet room and bathroom arrangements.

TABLE 52.04-A

Compartment Size Width/Length	Door Location	Door Size	Water Closet Location	Grab Bar Location
36" x 72"	Front entrance	32"	Centered	Each side of WC
36" x 78"	Side entrance	36"	Centered	Each side of WC
42" x 78"	Side entrance	32"	Centered	Each side of WC
48" x 57"	Front entrance	32"	Offset ¹	Wall closest to WC and behind the WC
48" x 72"	Side entrance	32"	Offset ¹	Wall closest to WC and behind the WC

¹Offset ~~±6~~ 15 to 18 inches from center line of water closet to wall.

(d) Grab bars. Each grab bar shall be designed and anchored to support a weight of at least 250 pounds, applied at the bar. The grab bars shall have a smooth finish, with an approximate outside diameter between one inch to 1-1/2 inches, and with 1-1/2 inches clearance between rail and wall.

1. Side-mounted grab bars. Side-mounted grab bars shall be installed 33 inches high and parallel to the floor.

2. Single-fixture toilet rooms. In single fixture toilet rooms containing one water closet and one lavatory, one grab bar shall be located on the wall adjacent to the water closet ~~and one on the wall behind the water closet.~~

3. Bathing facilities (bathtubs). Horizontal grab bars for bathtubs shall be located along the side wall and one end wall and shall be mounted 4 to 6 inches above the rim of the tub. A vertical 36-inch long grab bar shall be required on the side wall, located not more than 30 inches from the end of the tub. The bottom of the bar shall be 9 inches above the rim of the bathtub. See Appendix for diagrams.

4. Bathing facilities (shower stalls). In shower stalls, horizontal grab bars shall be mounted 36 inches above the floor of the shower stall and be located on the back wall and the wall opposite the seat. See Appendix for diagrams.

5. Seat-mounted grab bars are not permitted.

(e) Water closets. The seat height of the water closet shall be 16 inches to 18 inches above the floor.

(f) Lavatory. At least one lavatory, mounted at a height which allows 29 inches clear space at the bottom of the apron and a maximum rim height of 34 inches, shall be provided.

Note: It is recommended that water supply controls be single lever controls and that exposed hot water pipes be insulated.

(g) Mirror and towel dispensers. At least one mirror and towel dispenser or hand dryer, when provided, shall be mounted not more than 40 inches above the floor.

Note: The department will accept toilet rooms, individual toilet compartments and grab bars as illustrated in the Appendix.

Subsection Ind 52.04 (9) (a) 1. is amended to read:

1. Door sizes. All ~~accessible~~ entrance doors and passageway doors used to provide accessibility shall be at least 32 inches in width.

Subsection Ind 52.04 (9) (a) 3. is created to read:

3. Doors in series. Doors in series, other than those which are electronically controlled, shall be arranged to provide a minimum distance of 6 feet 6 inches between the doors when closed. See Appendix for diagrams.

Subsections Ind 52.04 (9) (c) 1. and 2. are amended to read:

1. International symbol for barrier-free environments. The international symbol for barrier-free environments shall identify all accessible entrances, toilet facilities, drinking fountains, telephones and parking spaces.

2. Location. The international symbol for barrier-free environments shall be placed at all entrances indicating the location of the nearest accessible entrance(s) and accessible toilet facilities. The symbol at the exterior of the building shall be legible from adjacent streets, driveways or public walks.

Subsection Ind 52.04 (9) (f) Note is amended to read:

Note: Conventional floor-mounted water coolers can be serviceable to patrons with functional limitations if a small fountain is mounted on the side of the cooler 30 inches above the floor. Fully recessed water fountains are not recommended and should not be recessed in an alcove unless the alcove is wider than a wheelchair. See Appendix for accessible designs.

Section Ind 52.07 is created to read:

Ind 52.07 FIREPLACES AND FIREPLACE STOVES. Masonry fireplaces, factory-built fireplaces and factory-built fireplace stoves shall be constructed and installed in accordance with the NFPA standard No. 211 for "Chimneys, Fireplaces and Vents" [Ind 51.27 (7a)].

(1) Masonry fireplaces. (a) Masonry fireplaces shall be constructed of solid masonry units, stone or reinforced concrete.

(b) The total thickness of the back and sides shall be not less than 12 inches.

1. Exception. The minimum thickness may be reduced to 8 inches if a 2-inch firebrick or other approved lining is provided, or if a minimum 1/4-inch thick steel firebox liner is provided and at least 4 inches of the required 8 inches is of solid masonry.

(c) Wood or combustible framing shall not be placed within 2 inches of the outside face or back surface of the fireplace and not less than 6 inches from the inside surface of the nearest flue lining.

(d) All spaces between masonry fireplaces and wood beams, headers, joists or trimmers shall be firestopped by placing noncombustible material to a depth of one inch at the bottom of such spaces.

(e) Masonry over the fireplace opening shall be supported by a lintel of noncombustible material, masonry arch, or equivalent.

(f) Warm-air circulating ducts employed with steel fireplace units shall be constructed of masonry or metal.

(g) Fireplaces at or within 12 inches of the floor level shall have hearth extensions of brick, concrete, stone, tile or other approved noncombustible materials.

1. Hearth extensions shall extend at least 16 inches in front of and at least 8 inches beyond each side of the fireplace opening. Where the fireplace opening is 6 square feet or larger, the hearth extension shall extend at least 20 inches in front of and at least 12 inches beyond each side of the fireplace opening.

(2) Factory-built fireplaces. (a) Factory-built fireplaces consisting of a fire chamber assembly, one or more chimney sections, a roof assembly and other parts shall be tested and listed by a nationally recognized testing laboratory.

(b) The assembly shall be erected and maintained in accordance with the manufacturer's recommendations and the conditions of approval of the testing laboratory.

(c) Portions of chimneys extending through rooms or closets shall be enclosed to prevent personal contact, prevent contact with combustible materials, and prevent damage.

(d) Hearth extensions of not less than 3/8-inch thick asbestos, hollow metal, stone, tile or other approved material shall be provided.

Note: Hearth extension materials may be placed on combustible floors.

1. The hearth extension shall extend not less than 16 inches in front of and at least 8 inches beyond both sides of the fireplace opening.

(3) Factory-built fireplace stoves. (a) Factory-built fireplace stoves consisting of a free-standing chamber assembly shall be tested and listed by a nationally recognized testing laboratory.

(b) The assembly shall be erected and maintained in accordance with the manufacturer's recommendations and the conditions of approval of the testing laboratory.

(4) Hearth opening protection. Fireplaces shall be equipped with safety screens or glass doors to prevent the escape of sparks and embers.

Section Ind 52.21 is amended to read:

Ind 52.21 LOCATION AND MAINTENANCE OF EXITS. Every exit mentioned in ~~Wis. Adm. Code sections Ind 51.14 to 51.19~~ 51.15 to 51.20, inclusive, shall lead to a street, alley or open court connected with a street. All such exits and all passageways leading to and from the same shall be kept in good repair and unobstructed at all times.

Ind 52.60 FIXTURES.

Subsection Ind 52.60 (1) is amended to read:

(1) Water closets. Only water closets of porcelain, vitreous china, stainless steel or other nonabsorbent materials shall be used. All water closets in public buildings and places of employment shall have elongated bowls and hinged, open-front seats without cover. Water closets in apartments, day care centers, individual executive offices, and sleeping units of hotels and motels may be of the round bowl type, provided with a hinged, closed-front seat, with or without cover. Water closets shall be equipped to limit the use of water to not more than 4 gallons per flush.

Subsection Ind 52.60 (2) (c) is amended to read:

(c) Flushing devices. The urinals shall be equipped with an effective flushing device which limits the use of water to not more than 1.5 gallons per urinal per flush.

Subsection Ind 52.60 (3) (a) is amended to read:

(a) Lavatories. Lavatories shall be of an approved type and shall be provided with hot and cold running water. The faucets of such lavatories shall be of a type which limits the flow of water through the faucet, after the handle is released, to not more than one gallon. Lavatories in toilet rooms of private living units shall be equipped to limit the flow of water to not more than 3 gallons per minute. The lavatories may be equipped with a hot and cold regulating device. If a multiple-use lavatory is installed, 24 lineal inches of wash sink or 20 inches measured along the edge of a circular basin will be considered equivalent to one lavatory.

Subsection Ind 52.60 (5) (b) is amended to read:

(b) Hot and cold water. Bathing facilities shall be provided with hot and cold water and be equipped with a hot and cold water regulating device. The device shall be plainly marked. Supply or feed pipes to showers shall be placed overhead or protected to avoid the probability of a person coming in contact with the hot water pipes. Showers shall be equipped to limit the flow of water to not more than 3 gallons per minute per shower head.

CHAPTER IND 53--STRUCTURAL REQUIREMENTS

Ind 53.11 LIVE LOADS.

Subsection Ind 53.11 (4) is repealed and recreated to read:

(4) Roof loads. Roof structural members subject to snow accumulation shall be designed for all of the following roof load distributions:

(a) Full load as indicated in the zone map for roof loads distributed over the entire area. (The loads are to be applied to the horizontal projection of the roof.)

1. Exception. Greenhouses shall be designed for not less than one-half the value specified for roofs in the zone map.

(b) Full load on the leeward side and one-half load on the windward side of sloped roofs having a pitch of 15° or more.

(c) Full load on the end span of continuous purlin members having a tributary area of 200 square feet or less and one-half load on the remaining spans.

(d) Nonuniform load caused by excess snow, ice or water accumulation at roof level elevation differences, parapets, canopies, valleys and similar areas.

1. The nonuniform snow loading shall be determined by multiplying the indicated roof load by a snow load coefficient (C_s) appropriate for the roof area considered.

$$S = C_s g$$

where S = design snow load, psf

g = roof live load as indicated in the zone map for roof loads
[see (a) of this subsection]

C_s = snow load coefficient

Note: Acceptable snow load distribution and coefficients (C_s) for typical roof configurations are given in Appendix A. Additional information can be found in the "Commentary on Snow Loads," in supplement No. 4 to the National Building Code of Canada.

2. The roof load shall be increased to account for the accumulation of drifting snow on the lower of multi-level roofs if the upper roof is part of the same building or of an adjacent building not more than 15 feet away.

Section Ind 53.23 is repealed and recreated to read:

Ind 53.23 FROST PENETRATION. (1) Depth. Footings and foundations shall be placed below the frost penetration level, but in no case less than 42 inches below adjacent ground. Such footings shall not be placed over frozen material.

(2) Floating slabs and grade beams. The edges of floating slabs and grade beams need not be installed below the minimum frost penetration provided adequate measures have been taken to prevent frost forces from damaging the structure.

(3) Walks, stoops and ramps adjacent to required exits. The edges of walks, stoops or ramps or the footing and foundation of walks, stoops or ramps need not be installed below the minimum frost penetration line provided adequate measures have been taken to prevent frost forces from damaging the structure or affecting the structure in such a manner as to obstruct the exit.

Note: Also see section Ind 52.21--location and maintenance of exits.

Ind 53.322 EMPIRICAL METHOD OF DESIGN.

Subsection Ind 53.322 (5) (c) 1. b. is amended to read:

b. Individual ties, the equivalent of not less than 3/16 inch diameter steel rods, with one tie for not more than each 4-1/2 square feet of wall area. Ties in alternate courses shall be staggered. The maximum vertical distance shall not exceed 18 inches. The maximum horizontal distance shall not exceed 36 inches. Ties bent to rectangular shape shall be used with hollow masonry units. With solid masonry units, either rectangular ties or ties bent to 90 degree angles, Z shaped, to provide hooks not less than 2 inches long shall be used. In hollow walls, additional ties shall be provided at all openings, spaced not more than 3 feet apart around the perimeter and within 12 inches of the opening. Corrugated metal ties shall not be used.

Ind 53.40 CONCRETE REQUIREMENTS.

Subsection Ind 53.40 (1) (c) Note is amended to read:

Note: The following standards and recommendations ~~(1) through (13)~~ are recognized by the department as being good engineering practice: (1) "Commentary on Building Code Requirements for Reinforced Concrete," ACI Report 318; (2) "Recommended Practice for Selecting Proportions for Concrete," ACI Std. 211.1; (3) "Recommended Practice for Selecting Proportions for Structural Lightweight Concrete," ACI Std. 211.2; (4) "Recommended Practice for Hot Weather Concreting," ACI Std. 605; (5) "Recommended Practice for Cold Weather Concreting," ACI Std. 306; (6) "Manual of Standard Practice for Detailing Reinforced Concrete Structures," ACI Std. 315; (7) "Recommended Practice for Evaluation of Compression Test Results of Field Concrete," ACI Std. 214; (8) "Recommended Practice for Measuring, Mixing and Placing Concrete," ACI Std. 614; (9) "Recommended Practice for Concrete Formwork," ACI Std. 347; (10) "Specification for the Design and Construction of Reinforced Concrete Chimneys," ACI Std. 505; (11) "Suggested Design of Joints and Connections in Precast Structural Concrete," ACI Report 512; (12) "Guide for Cellular Concretes Above 50 pcf, and for Aggregate Concretes Above 50 pcf with Compressive Strengths Less than 2500 psi," ACI JOURNAL, February 1975 (copies of above standards and recommendations may be obtained from American Concrete Institute, P.O. Box 19150, Detroit, Michigan 48219); (13) "Recommended Practices for Welding Reinforcing Steel, Metal Inserts and Connections in Reinforced Concrete Construction, AWS Std. 12.1 (American Welding Society, 2501 NW 7th St., Miami, Florida 33125).

Ind 53.50 STRUCTURAL STEEL REQUIREMENTS.

Subsection Ind 53.50 (3) (c) Note should be relocated to follow (3) (b).

Section Ind 53.52 is amended to read:

Ind 53.52 STEEL JOIST REQUIREMENTS. The design, fabrication and erection of steel joists shall conform to the ~~"Standard Specifications for Open-Web Steel Joists, Longspan Steel Joists and Deep Longspan Steel Joists"~~ "Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders," adopted by the SJI [Ind 51.27 (9)].

Ind 53.53 STRUCTURAL WELDING OF STEEL.

Subsection Ind 53.53 (5) is amended to read:

(5) Design of welded connections and joints. The details of all joints shall comply with the requirements of AWS D 1.1, section 2 and section 10, parts ~~III C~~ and ~~IV D~~ [Ind 51.27 (6)]. ~~A joint form not specified~~ All joint forms, except those specified in AWS D 1.1, section 2 and section 10, parts ~~III C~~ and ~~IV D~~, shall not be used ~~until it is~~ unless qualified to the satisfaction of the department.

(a) Stud welding. Stud welding shall be done by a procedure qualified in accordance with the requirements of AWS D 1.1, section 4, Part VI F [Ind 51.27 (6)].

Subsections Ind 53.53 (6) (a), (b) and (c) are amended to read:

(a) The manual welders shall be tested and qualified in accordance with AWS D 1.1, section 5, part ~~III C~~ C [Ind 51.27 (6)].

(b) The manual tackers shall be tested and qualified in accordance with AWS D 1.1, section 5, part ~~V E~~ E [Ind 51.27 (6)].

(c) The welding machine operator shall be tested and qualified in accordance with AWS D 1.1, section 5, part ~~IV D~~ D [Ind 51.27 (6)].

Ind 53.62 SPECIAL SYSTEMS.

Subsection Ind 53.62 (1) (a) 1. a. is amended to read:

a. Section 302.2. ~~Bending moments~~ Moment coefficients used in the design of top chord members shall be based on the assumption of no fixity at member ends or joints due to plate connectors. Moment and buckling factors as shown in Table 1 of TPI-78 are acceptable.

Ind 53.64 WOOD FOUNDATIONS.

Section Ind 53.64 Note is amended to read:

Note: Section Ind 51.02 (4) (b) 1. b. requires that exterior walls below the first floor structural system be counted as a story when constructed of materials other than masonry or ~~concrete~~ concrete. Therefore, buildings utilizing wood foundations will be limited to 2 levels (one-story and basement, one-story and ground floor, or 2-story with wood frost wall).

CHAPTER IND 54--FACTORIES, OFFICE AND MERCANTILE BUILDINGS

Ind 54.01 CONSTRUCTION, HEIGHT AND ALLOWABLE AREA.

Subsection Ind 54.01 (2) (b) 3. Note is created to read:

Note: Built-up roofs, including those having a class A rating, are considered combustible and do not meet the requirements of this section.

Subsection Ind 54.01 (3) is amended to read:

(3) No building shall be limited in area when divided into sections which do not exceed the maximum areas tabulated in this section by fire division walls. Such fire division walls shall be as specified in section Ind 51.02 (13). All openings in such walls shall be protected by swinging, sliding or overhead fire-resistive doors as specified in section Ind 51.047. ~~Such doors may normally remain open if held in that position by fusible links.~~ Doors protecting such openings may be left open if equipped with an automatic closing device actuated by smoke density or products of combustion other than heat. Doors used as required exits shall comply with the requirements of section Ind 51.19 (2).

Ind 54.02 NUMBER AND LOCATION OF EXITS.

Subsection Ind 54.02 (4) is amended to read:

(4)* Exit distance. Additional exits shall be provided so that no part of any factory, office, mercantile or other building within the scope of this chapter will be more than 100 feet distant from an exit. Where approved automatic sprinklers are provided throughout the building, an increase in exit distance to 150 feet will be permitted. Hazardous occupancies, as specified in sections Ind 54.50-54.52, and buildings having contents which are liable to burn with extreme rapidity or from which poisonous fumes may be liberated or explosions occur in case of fire shall have exits provided so that the maximum distance to exit is limited to 75 feet. All of the above distances shall be measured along public passageways and aisles.

Note: The department uses the "triangulation method" to determine exit distance. The use of arcs to determine exit distance does not satisfy the intent of the rule.

Ind 54.03 TYPE OF EXITS.

Subsection Ind 54.03 (1) (d) 5. is amended to read:

5. Railings are provided in accordance with the provisions of section Ind ~~51.16-(5)~~ 51.162;

Subsection Ind 54.03 (3) is amended to read:

(3) Wherever stairways are required under this classification, ramps with a slope not greater than one foot in 6 8 may be substituted. Ramps shall comply with all the requirements for stairways as to construction, enclosures, width, landing and lighting, and shall be surfaced with an approved non-slip material. ~~Handrails shall not be required where the slope of the ramp is less than one foot in 10 feet.~~

Ind 54.04 REQUIRED EXIT WIDTH.

Subsection Ind 54.04 (3) is amended to read:

(3) Horizontal exits in accordance with the ~~requirements~~ requirements of section Ind 51.19 may provide up to one-half of the required exit widths for any floor, subject to the provisions of section Ind 54.02.

Section Ind 54.06 is amended to read:

Ind 54.06 EXIT DOORS. (1) General. Every door which serves as an exit from ~~a room or space accommodating more than 25 persons, or is an exit from a public passageway or stairway~~ a building, public passageway or stairway shall be a standard exit door as specified in section Ind 51.15.

(a) Exception. Exit doors serving rooms or suites accommodating 25 or less persons need not swing in the direction of egress.

(b) Exception. Exit doors serving spaces accommodating 10 or less persons may be reduced in width to 2 feet 8 inches and need not swing in the direction of egress.

(2) Illuminated exit signs. Every exit doorway from each floor, other than the principal entrance on the first floor, shall be indicated by an approved illuminated sign over the door bearing the word EXIT or OUT in plain letters not less than 5 inches in height.

Ind 54.08 ENCLOSURE OF STAIRWAYS AND SHAFTS.

Subsection Ind 54.08 (1) is amended to read:

(1) All stairways, including landings, ramps and ~~elevator~~ shafts, shall be enclosed as ~~shown in table 51.03-A~~ specified in section Ind 51.02 (11).

Section Ind 54.21 is amended to read:

Ind 54.21 TENTS. All tents used for sales or storage purposes shall conform to the requirements specified for tents in sections Ind ~~55.28-Ind-55.63, inclusive~~ 62.42-62.51 of this code

CHAPTER IND 55--THEATERS AND ASSEMBLY HALLS

Section Ind 55.01 is amended to read:

Ind 55.01 ASSEMBLY HALLS. (1) In the assembly hall classification are included all buildings, or parts of buildings, other than theaters, which will accommodate more than 100 persons for entertainment, recreation, worship or dining purposes.

Note #1: For assembly areas in connection with schools and other places of instruction, refer to ~~Wis.-Adm.-Code~~ chapter Ind 56.

Note #2: Funeral homes are considered to be places of worship.

(a) Every ~~assembly-hall~~ place of assembly which will accommodate not more than 100 persons shall conform to the requirements of ~~Wis.-Adm.-Code~~ chapter Ind 54, covering factories, office and mercantile buildings.

Ind 55.02 CLASS OF CONSTRUCTION.

Subsection Ind 55.02 (2) (a) 2. c. is amended to read:

c. The lower level shall be separated from the upper level by 2-hour noncombustible fire-resistive rated construction or better. The first floor supports shall also be of 2-hour noncombustible fire-resistive rated construction.

Ind 55.13 SEATING.

Subsection Ind 55.13 (2) is repealed.

Subsection Ind 55.13 (3) is renumbered 55.13 (2).

Subsection Ind 55.13 (4) is renumbered 55.13 (3).

Subsection Ind 55.13 (5) is renumbered 55.13 (4).

Subsection Ind 55.13 (6) is renumbered 55.13 (5).

Ind 55.23 PROSCENIUM CURTAIN.

Section Ind 55.23 Note is repealed.

Ind 55.29 BOILER AND FURNACE ROOMS.

Section Ind 55.29 heading and (1) are amended to read:

Ind 55.29 ISOLATION OF HAZARDS. (1) ~~Every-boiler-or-furnace-room,-including-the-breeching-and-fuel-room,~~ All fuel-fired heating boilers and furnaces, fuel rooms, storage vaults for paints, oils and similar combustibles, and other similar hazards in a building shall be enclosed with a 3-hour fire-resistive enclosure as specified in section Ind 51.04, except that in case of an assembly hall accommodating not more than 300 persons, a 2-hour fire-resistive enclosure as specified in section Ind 51.04 may be used. All openings shall be protected with-self-closing-fire-resistive-doors by fire-rated door assemblies equipped with self-closing devices as specified in section Ind 51.047.

Sections Ind 55.58 through Ind 55.62 are repealed. (See chapter Ind 62.)

Section Ind 55.63 is renumbered Ind 55.58 and amended to read:

Ind 55.58 ELECTRICAL INSTALLATIONS. (1) General. Electrical systems in all places of outdoor assembly shall be installed in accordance with the requirements of the Wisconsin state electrical code. All such systems shall be maintained and operated in a safe and workmanlike manner.

(2) Protection and isolation. The electrical system and equipment shall be isolated from the public by proper elevation and guarding. All electrical fuses and switches shall be installed in approved enclosures. Cables laid on the ground or in areas traversed by the public shall be placed in trenches or protected by approved covers.

Section Ind 55.64 is renumbered Ind 55.59.

Section Ind 55.65 is renumbered Ind 55.60 and amended to read:

Ind 55.60 ILLUMINATION: EXIT LIGHTS AND SIGNS. (1) Lighting of exits. All exits, aisles and passageways leading to exits in grandstands and other places of outdoor assembly shall be kept adequately lighted at all times when the structure is occupied by the public. Artificial illumination having an intensity of not less than 2.5 footcandles at the floor line shall be provided when natural light is inadequate.

(2) Illuminated exit signs. Exit lights and signs complying with the requirements of section Ind 55.11 shall be provided in all places of outdoor assembly where more than 100 persons can be accommodated.

Section Ind 55.66 is renumbered Ind 55.61.

Section Ind 55.67 is renumbered Ind 55.62 and amended to read:

Ind 55.62 TOILET FACILITIES. ~~Separate-toilets-shall-be-provided-for-each-sex in-connection-with-all-places-of-outdoor-assembly.~~ All places of outdoor assembly shall be provided with separate toilet facilities in accordance with section Ind 55.32. Toilet rooms and equipment shall comply ~~in-all-respects~~ with the requirements of sections Ind 52.50-Ind 52.64, ~~inclusive~~, of this code.

Section Ind 55.68 is repealed. (See chapter Ind 62.)

CHAPTER IND 56--SCHOOLS AND OTHER PLACES OF INSTRUCTION

Section Ind 56.001 is amended to read:

Ind 56.001 SCOPE. The requirements of this chapter, ~~sections Ind 56.001 to Ind 56.20 inclusive,~~ shall apply to all public and private schools, universities, colleges, academies, seminaries, libraries, museums and art galleries; including all buildings or parts of buildings used primarily for instructional purposes.

Section Ind 56.03 is created to read:

Ind 56.03 PROTECTION OF BASEMENT LEVELS. Buildings with basements shall at such levels be protected with an approved automatic sprinkler system (Ind 51.23) or an approved automatic smoke detection system, either of which shall be electrically connected to the required fire alarm (Ind 56.19).

Note: See section Ind 51.01 for definitions of "automatic" and "basement."

Section Ind 56.04 is repealed.

Ind 56.05 EXTERIOR WALL OPENINGS.

Subsection Ind 56.05 (2) is repealed.

Subsection Ind 56.05 (3) is renumbered 56.05 (2).

Ind 56.08 EXIT DOORS.

Subsection Ind 56.08 (1) is amended to read:

Ind 56.08 EXIT DOORS. (1) Standard exit doors. Exit doors shall comply with the requirements of section Ind 51.15, ~~except that in elementary schools the width may be reduced to 3 feet.~~ The aggregate width of exit doors shall be as required in section Ind 56.07. No single door or leaf of a double door shall be more than 42 inches wide.

Subsection Ind 56.08 (2) (b) is amended to read:

(b) Classroom doors serving a capacity of 51-100 more than 50 persons. Classroom doors serving classrooms with a capacity of 51 ~~to 100 persons shall be not less than 3 feet 0 inches in width and shall swing outward toward the means of egress~~ more than 50 persons shall be standard exit doors and shall swing outward toward the means of egress.

Subsection Ind 56.08 (2) (c) is repealed.

Section Ind 56.15 is repealed and recreated to read:

Ind 56.15 ISOLATION OF HAZARDS. (1) General. All fuel-fired heating boilers and furnaces, power boilers, fuel rooms, storage vaults for paints, oils and similar combustibles, fuel-fired kilns and dryers, and other similar hazards, shall be enclosed as follows:

(a) In every building more than one story in height, the enclosure shall be not less than 4-hour fire-resistive rated construction as specified in section Ind 51.04.

(b) In one-story buildings, the enclosure shall be not less than 2-hour fire-resistive rated construction as specified in section Ind 51.04.

(2) Protection of openings. All openings shall be protected by fire-rated door assemblies equipped with self-closing devices as specified in section Ind 51.047.

CHAPTER IND 57--APARTMENT BUILDINGS, HOTELS AND PLACES OF DETENTION

Ind 57.07 NUMBER, LOCATION AND TYPE OF EXITS.

Subsection Ind 57.07 (1) (intro. par.) is amended to read:

(1) There shall be at least 2 exits accessible from each living unit by means of stairways, interior enclosed stairways, ramps, fire escapes or horizontal exits. The number and location of such exits shall be such that in case any exit or passageway is blocked at any point, some other exit will still be accessible through public passageways from every living unit.

Subsection Ind 57.07 (2) is amended to read:

(2) (a) Exits shall be distributed so that the entrance to each living unit will be not more than 50 feet distant from an exit, measuring along public passageways, if in a building of less than type No. 1 or No. 2 construction, or 75 feet in a type No. 1 or No. 2 building.

(b) The exit distances required by this section shall be measured to exits to grade, to doors leading to stairway enclosures complying with section Ind 51.18, to horizontal exits complying with section Ind 51.19, or to doors leading to fire escapes complying with section Ind 51.20.

Subsection Ind 57.07 (3) (intro. par.) is amended to read:

(3) At least one-half of the required exits, ~~in buildings of more than one story,~~ accessible from each living unit shall be exits to grade or stairways as specified in sections Ind 51.15 and 51.16. The remaining exits shall be either stairways, interior enclosed stairways, exits to grade or horizontal exits; or fire escapes may be used as exits from floors which are not more than 40 feet above grade if they are placed against blank walls. Every building which accommodates more than one family, or 8 persons, above the second story shall have at least 2 stairways.

Subsection Ind 57.07 (3) (a) 5. is amended to read:

5. Railings are provided in accordance with the provisions of section Ind ~~51.16-(5)~~ 51.162.

Subsection Ind 57.09 (1) (intro. par.) is amended to read:

Ind 57.09 EXIT DOORS. (1) Exit doors shall be as specified in section Ind 51.15, except that a door which is used by not more than 25 persons ~~shall be not less than 3 feet wide and~~ shall not be required to open outward.

Ind 57.12 STEPS, STAIRS AND SHAFTS.

Subsection Ind 57.12 (2) (intro. par.) is amended to read:

(2) Interior stairs. Interior stairs ~~shall conform to the requirements of section Ind 51.16, except that stairs which are~~ used by not more than 25 persons shall be not less than 3 feet wide.

Ind 57.18 HABITABLE ROOMS--FLOORS BELOW GRADE.

Subsection Ind 57.18 (4) is repealed and recreated to read:

(4) All windows shall comply with the requirements of sections Ind 52.02 and 57.19.

(a) Windows having sills below grade (at building) shall be provided with an areaway as described in (5) of this section.

(b) Window assemblies of a type which, when open, obstruct emergency egress shall not be used.

Subsection Ind 57.18 (7) (b) Note #2 and Note #3 are repealed.

Section Ind 57.19 is amended to read:

Ind 57.19 WINDOWS. (1) General. The outside windows in every habitable room shall have a total sash area of at least ~~one-tenth~~ 8% of the floor area of the room but not less than ~~12~~ 5.7 square feet in area. The openable area of such windows shall be equal to not less than ~~5%~~ 4% of the floor area of the room served and shall provide a clear opening of not less than 20 inches in width and 24 inches in height. The bottom of the opening shall be not more than 48 inches above the floor.

(a) Exception. Hotel and motel rooms and similar sleeping rooms in buildings accommodating transients need not be provided with openable outside windows provided the rooms have clear glazed panels facing naturally lighted pool or recreational areas. The rooms shall be provided with mechanical ventilation supplying at least 5 CFM of tempered outside air per occupant.

Note: Also see Ind 52.02 and Ind 64.07.

Ind 57.20 ISOLATION OF FIRE HAZARDS.

Subsection Ind 57.20 (5) (intro. par.) is amended to read:

(5) The enclosure for the heating ~~plant~~ plants located in the basement may be omitted in apartment buildings not more than 2 stories in height and having not more than 2 living units on a floor, and in rooming houses not more than 2 stories in height and having not more than 8 habitable rooms on a floor, provided no part of the building is used for business purposes and all interior basement stairways are enclosed with a one-hour fire-resistive enclosure as specified in section Ind 51.04, or better. See section Ind 57.25 for exception to row house installations.

Ind 57.22 FIRE ALARMS.

Subsections Ind 57.22 (2) (a) and (2) (b) are repealed.

Ind 57.25 ROW HOUSE.

Subsection Ind 57.25 (1) is amended to read:

(1) Definition. A row house is a place of abode not more than 2 stories in height, arranged to accommodate 3 or more attached row living units in which each living unit is separated from the adjoining unit by ~~an unpiereed~~ a vertical occupancy separation of not less than one-hour fire-resistive construction, extending from the basement or lowest floor to the under side of the roof boards.

~~Note: The intent of this section is to allow the piercing of vertical occupancy separation by plumbing and electrical system components.~~

Subsection Ind 57.25 (2) (e) is created to read:

(e) Piercing of the vertical occupancy separation between the units by doors and windows shall be prohibited. Piercing of the vertical occupancy separation by mechanical, electrical or plumbing elements shall be permitted provided the piercing is in accordance with section Ind 51.049 and it does not violate the hourly rating of the wall.

Note: Mechanical, electrical or plumbing systems may be located in the occupancy separation wall and components may penetrate one or both sides of the wall within the same stud space. See section Ind 51.049 (3) for additional requirements pertaining to plastic components.

Ind 57.26 RESIDENTIAL HEALTH CARE FACILITIES.

Subsection Ind 57.26 (1) heading is amended to read:

(1) ~~Interior-circulation~~ Accessible patient rooms.

Subsection Ind 57.26 (3) (intro. par.) is amended to read:

(3) Accessible bathing facilities. In new construction and patient room additions, accessible bathing facilities shall be provided in all of the required accessible patient toilet rooms. In existing construction and remodeling, at least one centrally located accessible bathing facility shall be provided near each nursing station on each floor. The bathing facility shall be available to both sexes and shall be accessible from a public corridor or public area. Where bathing facilities are required, the bathtub ~~and~~ or shower designs shall comply with the following requirements:

Subsection Ind 57.26 (3) (a) is repealed.

Subsection Ind 57.26 (3) (b) is renumbered 57.26 (3) (a) and amended to read:

(a) Bathtubs. The bathtub shall be equipped with a hand shower with a flexible hose not less than 6 feet in length. A seat of nonabsorbent material shall be provided and shall be mounted 17 to 20 inches above the floor of the bathtub, and may be either folding, retractable or fixed, unless an alternate method, such as a lift, is provided. Grab bars shall be mounted on 2 sides of the bathtub and shall comply with the requirements of section Ind 52.04 (8) ~~(e)-4-~~ (d) 3. (See Appendix for examples of accessible bathroom arrangements.)

Note: Refer to Wis. Adm. Code chapter H62--Design, Construction, Installation, Supervision and Inspection of Plumbing, for requirements pertaining to the plumbing system, including the use of vacuum breakers.

Subsection Ind 57.26 (3) (c) is renumbered 57.26 (3) (b) and amended to read:

(b) Showers. The shower stalls shall be equipped with lever water controls. A seat of nonabsorbent material shall be provided and located 17 to 20 inches from the floor of the shower, and may be folding, retractable or fixed. Grab bars shall be mounted on 2 sides of the shower stall and shall comply with the requirements of section Ind 52.04 (8) ~~(e)-4-~~ (d) 4. (If a special wheelchair is provided for use in the shower, the grab bars and seat are not required.) The threshold to the shower stall shall be no more than 1/2-inch and the edges shall be beveled to provide a smooth, unbroken surface to accommodate a wheelchair. (See Appendix for examples of accessible shower room arrangements.)

Note: Shower stalls are preferred to bathtubs. See Appendix for examples of accessible bathing facilities.

CHAPTER IND 60--CHILD DAY CARE FACILITIES

Ind 60.12 DOORS.

Subsection Ind 60.12 (1) (a) is repealed.

Subsection Ind 60.12 (1) (b) is renumbered Ind 60.12 (1) (a).

Subsection Ind 60.12 (1) (c) is renumbered Ind 60.12 (1) (b).

Subsection Ind 60.12 (1) (d) is renumbered Ind 60.12 (1) (c).

Ind 60.13 WINDOWS AND OUTSIDE OPENINGS.

Subsection Ind 60.13 (2) is amended to read:

(2) The windows or vision panels shall have ~~an aggregate minimum glass area of 10%~~ a total sash area of at least 8% of the floor area of the room, but not less than 5.7 square feet in area. The ~~minimum~~ minimum openable area of the ~~doors and~~ windows shall be equal to 5% at least 4% of the floor area of the room served and shall provide a clear opening of not less than 20 inches in width and 24 inches in height. The bottom of the opening shall be not more than 48 inches above the floor.

Subsection Ind 60.13 (3) is amended to read:

(3) See section Ind 60.18 (2) for exception to the requirement for openable windows.

Ind 60.18 HEATING AND VENTILATING.

Subsection Ind 60.18 (2) is amended to read:

(2) Fresh air at the rate of 5 cubic feet per minute per occupant shall be provided for centers that do not comply with the openable window requirements of Ind 60.13 (2).

Ind 60.19 OPERATING FEATURES.

Subsection Ind 60.19 (5) is created to read:

(5) Railings guarding differences of elevation (i.e., open sides of stairways, elevated platforms, walks, balconies, mezzanines) shall be designed to prevent the passage of an object with a diameter larger than 9 inches.

CHAPTER IND 62--SPECIALTY OCCUPANCIES

Ind 62.10 DEFINITIONS.

Subsections Ind 62.10 (3) and (4) are created to read:

(3) Outdoor theater. An outdoor theater is a place of outdoor assembly used for the showing of plays, operas, motion pictures and similar forms of entertainment in which the audience views the performance from self-propelled vehicles parked within the theater enclosure.

(4) Tents. Tents are portable, temporary shelters or structures, the covering of which is made of pliable material.

Ind 62.26 NUMBER, LOCATION AND TYPE OF PEDESTRIAN EXITS.

Subsection Ind 62.26 (4) is amended to read:

(4) Type of exits. At least one-half of the exits required ~~in~~ by this section shall be standard exits to grade, stairways or horizontal exits as specified in sections Ind 51.15, 51.16 and 51.19, respectively. The other exits may be non-parking access ramps with a maximum slope of ~~1+6~~ 1:8.

Ind 62.28 heading and subsection Ind 62.28 (1) are amended to read:

Ind 62.28 ~~HANDRAILS-AND-GUARDRAILS~~ PEDESTRIAN AND PERIMETER GUARDRAILS. (1) ~~Handrails~~ Pedestrian guardrails. (a) ~~Handrails~~ Pedestrian guardrails, or equivalent, ~~not less than 3 feet 6 inches in height~~ conforming to the requirements of section ~~Ind 51.16-(5)-(f)~~ 51.162, shall be provided on all open sides of the structure on each level.

(b) ~~Handrails~~ Pedestrian guardrails, as specified in Ind 62.28 (1) (a) shall be provided at changes of elevation within the structure ~~when~~ where the clear vertical opening at the elevation change is one foot 6 inches or greater.

Part III--sections Ind 62.42 through Ind 62.51 are created to read:

PART III--TENTS

Ind 62.42 SCOPE. The requirements of this part shall apply to all tents, except those used exclusively for construction purposes.

Ind 62.43 AREA LIMITATION AND SETBACKS. (1) Area of ground covered. No tent shall be erected to cover more than 75% of the premises on which it is located.

(2) Setback to property line and other structures. (a) Tents used for assembly purposes which cover 1500 square feet or more of ground area shall be located at least 20 feet from any other structure or adjoining property lines.

(b) Concession and other tents not used for assembly purposes need not be separated from each other and may be located less than 20 feet from other structures.

(3) Setback for exiting. Stake lines of adjacent tents used for assembly purposes shall be sufficient distance from each other to provide an emergency exit passageway not less than 6 feet in width between stake lines. Proper protection shall be provided along such stake lines to eliminate tripping hazards.

Ind 62.44 STRUCTURAL REQUIREMENTS. (1) Material size and strength. Poles and other members supporting tents shall be of sufficient size and strength to support the structure safely without exceeding the stresses specified in chapter Ind 53 of this code.

(2) Wind load. (a) All tents shall be adequately guyed, supported and braced to withstand a wind pressure or suction of not less than 10 pounds per square foot.

(b) The poles, guys, stakes, fastenings and similar devices shall be of sufficient strength and so attached as to resist a wind pressure of at least 20 pounds per square foot of projected area of the tent.

Ind 62.45 FLAME RESISTANCE. All tents used for assembly purposes or in which animals are stabled and all other tents used by the public in places of outdoor assembly shall be effectively flameproofed. The owner shall furnish a certificate or a test report by a recognized testing engineer or laboratory as evidence that such tents have the required flame resistance.

Ind 62.46 FIRE HAZARDS. (1) Clearing of ground. The ground enclosed by any tent used in connection with a place of outdoor assembly and for a distance of not less than 10 feet outside such structure on all sides shall be cleared of all flammable material or vegetation which will transmit fire. The premises shall be kept free from such flammable material during the period the premises are used by the public.

(2) Combustible material for care of animals. No hay, straw, shavings or similar combustible materials other than that necessary for the current feeding and care of animals shall be permitted within any tents used for public assembly except that sawdust and shavings may be used if kept damp.

(3) No smoking. No smoking or unapproved open flame of any kind shall be permitted in any tent while occupied by the public. "No Smoking" signs shall be conspicuously posted in all tents open to the public.

(4) Safety film. Tents shall not be used for motion picture performances unless safety film is used.

Ind 62.47 EXITS. (1) Number of exits. (a) Every tent occupied by the public shall have at least 2 standard exits located at or near opposite ends of the structure.

(b) In tents used for assembly purposes, exits shall be provided on 3 sides if the capacity exceeds 600 persons and on 4 sides where the capacity exceeds 1,000 persons.

(2) Exit distance. Exits shall be uniformly distributed but in no case shall the line of travel to an exit be greater than 150 feet.

(3) Exit width. The total width of exits from a tent used for assembly purposes shall be not less than 44 inches per 100 persons. Exit openings shall comply in all respects with the requirements of sections Ind 51.15 and Ind 55.10 of this code.

Ind 62.48 TOILET FACILITIES. Separate toilet facilities, in conjunction with all tents used as places of outdoor assembly, shall be provided in accordance with section Ind 55.32. Toilet rooms and equipment shall comply with the requirements of sections Ind 52.50-52.64 of this code or as approved by the department.

Ind 62.49 ELECTRICAL INSTALLATIONS. (1) General. Electrical systems in all tents used as places of outdoor assembly shall be installed in accordance with the requirements of the Wisconsin state electrical code. All such systems shall be maintained and operated in a safe and workmanlike manner.

(2) Protection and isolation. The electrical system and equipment shall be isolated from the public by proper elevation and guarding. All electrical fuses and switches shall be installed in approved enclosures. Cables laid on the ground or in areas traversed by the public shall be placed in trenches or protected by approved covers.

Ind 62.50 FIRE EXTINGUISHING EQUIPMENT. One or more fire extinguishers of approved type and size shall be provided in all tents used for assembly purposes. Such extinguishers shall be maintained in proper working order and shall be located where they are easily accessible, preferably in or near the ticket office. In large installations, additional fire extinguishing equipment shall be provided as directed by the local authority having jurisdiction.

Ind 62.51 ILLUMINATION; EXIT LIGHTS AND SIGNS. (1) Lighting of exits. All exits, aisles and passageways leading to exits in tents used as places of outdoor assembly shall be kept adequately lighted at all times when the structure is occupied by the public. Artificial illumination having an intensity of not less than 2.5 footcandles at the floor line shall be provided when natural light is inadequate.

(2) Illuminated exit signs. Exit lights and signs complying with the requirements of section Ind 55.11 shall be provided in all tents used as places of outdoor assembly where more than 100 persons can be accommodated.

Part IV--Outdoor Theaters--sections Ind 62.52 through 62.62 are created to read:

PART IV--OUTDOOR THEATERS

Ind 62.52 SCOPE. The requirements of this part shall apply to all outdoor theaters now in existence and to outdoor theaters hereafter constructed, except as provided in section Ind 62.52.

Ind 62.53 ENTRANCES AND EXITS. All entrances and exits for outdoor theaters shall comply with the regulations of the department of transportation for driveways from property abutting state highways and the following additional requirements:

(1) Number of entrances. Not more than one entrance shall be provided for each access road but each such entrance may be divided into 2 roadways and channelized to properly provide for vehicles turning right or left from the highway.

(2) Highway right-of-way. That portion of an entrance or exit lying within the highway right-of-way shall comply with the regulations of the authority in charge of the maintenance of the highway or, in the event this authority has no regulation, it shall comply with regulations prescribed by the state department of transportation.

(3) Number of exits. Not more than one exit shall be provided for each access highway but such exit may be suitably channelized to provide for right and left turns to the highway, and not more than one traffic lane shall be permitted for each traffic lane on the highway available to vehicles leaving the theater.

Ind 62.54 VEHICLE STORAGE. (1) Area needed. A storage area for vehicles, equal to not less than 10% of the theater capacity, shall be provided between the highway and the ticket booth. In all cases, sufficient storage space shall be provided so the vehicles will not back up on the traveled way of the highway. Storage area shall be calculated on the basis of 162 square feet per vehicle.

(2) Hold-over area. A hold-over storage area having sufficient capacity to accommodate not less than 15% of the theater capacity shall be provided between the ticket booth and the ramp area.

Ind 62.55 TOWER CONSTRUCTION. The tower supporting the motion picture screen shall be designed to resist a horizontal wind pressure of not less than 30 pounds for every square foot of exposed surface.

Ind 62.56 LOCATION OF TOWER. The screen shall be so oriented that the picture is not visible from any major highway. This requirement does not apply to towers erected prior to January 1, 1952.

Ind 62.57 CONCESSION AND MOTION PICTURE MACHINE BOOTH. (1) Motion picture booth. The motion picture booth and equipment shall comply in all respects with the requirements of sections Ind 55.40 through Ind 55.49 of this code.

(2) Concession buildings. Concession buildings in connection with outdoor theaters shall comply with the requirements of chapter Ind 54 of this code.

Ind 62.58 SANITARY EQUIPMENT. (1) Number of fixtures required. Outdoor theaters shall be provided with separate toilet facilities as required by section Ind 55.32. Toilet rooms and equipment shall comply with the requirements of sections Ind 52.50 through Ind 52.64 of this code.

(2) Determination of capacity. In determining the number of fixtures required for toilet rooms in connection with outdoor theaters, the capacity of the theater is established by allowing 2-1/4 persons for each vehicle accommodated, exclusive of vehicles parked in the waiting or hold-over area.

(3) Approaches to toilet rooms. Where the public toilet rooms are so located that the patrons must cross the ramp area in order to reach the toilet rooms, a suitable approach or passageway leading thereto shall be maintained. Such passageways shall be properly lighted and they shall be kept free from obstructions.

Ind 62.59 RAMPS AND SPEAKER EQUIPMENT. (1) Ramp spacing. Ramps shall be spaced not less than 38 feet apart. The ramps shall be so designed that any vehicle can move from its parked position to the exit driveway without being required to back up.

(2) Surface required. All ramps, parking areas, entrance and exit driveways shall be properly surfaced with a gravel surfacing or better, adequate to withstand the weight of the vehicles accommodated.

(3) Public transportation speaker facilities. Where additional seating space is provided in the theater enclosure for patrons using public transportation facilities, the speaker arrangement shall be such that the sound will be confined to the immediate seating area and not broadcast beyond the theater enclosure.

(4) Spacing of speaker posts and electrical wiring. There shall not be less than 18 feet distance between speaker posts, measured parallel to the ramps, except in seated areas for patrons using public transportation. All electrical wiring and

electrical equipment shall be installed in accordance with the provisions of the Wisconsin state electrical code. Each speaker post shall be wired with wire approved for underground use laid in trenches not less than 12 inches in depth.

Ind 62.60 LIGHTING. All entrance and exit driveways shall be adequately lighted and properly marked to avoid congestion and confusion and shall remain lighted throughout the performance and until the audience has left the area.

Ind 62.61 SPEED LIMIT. In every outdoor theater, notices of a permanent character shall be prominently displayed designating the maximum speed limit permitted for cars driven within the area. Parking lights shall be used when cars are moving in the theater enclosure.

Ind 62.62 RUNNING OF ENGINES. At each performance, an instructive trailer shall be shown on the screen informing the patrons of the danger of carbon monoxide poisoning when the engine is running and stating that when it becomes necessary to run the engine, the windows of the vehicle should be opened at least one inch.

CHAPTER IND 63--ENERGY CONSERVATION

Section Ind 63.001(heading) is created to read: Ind 63.001 SCOPE.

Subsection Ind 63.001 (2) is amended to read:

(2) Exempt buildings and structures. Buildings and structures, or portions thereof, ~~which are neither heated nor cooled~~ without space heating or cooling, service water heating, or illumination are exempt from the requirements of this chapter.

Subsection Ind 63.001 (3) (b) is amended to read:

(b) Any change of occupancy or use of any existing building or structure within the scope of this chapter which would ~~require an~~ increase in the energy consumption shall not be permitted unless such building or structure is made to comply with the requirements of this chapter.

Note: It is the intent of the department to have every new building or addition and every change of occupancy meet the energy conservation requirements of this chapter. It is not the intent to prevent a previously built building from installing air conditioning, nor to cause equipment with several years of remaining service to be discarded due to not being able to meet the required efficiencies of this chapter. However, occupancy changes such as building a warehouse and later remodeling it into an office space will not be permitted unless all the requirements of this chapter are met.

Ind 63.01 PLANS AND SPECIFICATIONS.

Subsection Ind 63.01 (2) is repealed and recreated to read:

(2) Electrical energy data and illumination. Illumination, power factor, switching and control plans and specifications shall be submitted in accordance with the requirements outlined in sections Ind 50.07 and Ind 50.12 and shall contain details and data to demonstrate compliance with the requirements of this chapter. Such information shall include, but is not limited to: lighting wattages and budget calculations, lighting fixture schedules, and information on switching, equipment, power factors and controls. Four copies of the illumination budget calculation form (DILHR-SBD-5315) may be used in lieu of 3 sets of plans on smaller projects for which plan layouts are not typically used. All information listed above shall still be provided.

Note: The review of electrical energy data will be for the sole purpose of determining compliance with the applicable energy conservation rules of this chapter. The review will not include determination of compliance with the Wisconsin state electrical code, Volume 2.

Ind 63.02 DEFINITIONS.

Subsection Ind 63.02 (1) is amended to read:

(1) Coefficient of performance (COP). Coefficient of performance is the ratio of ~~net-energy-output-to-the-net-energy-input~~ the rate of net heat removal for cooling or net heat output for heating to the rate of total energy input, expressed in consistent units and under standard rating conditions.

Ind 63.11 GENERAL REQUIREMENTS.

Subsection Ind 63.11 (2) Note is created to read:

Note: The designer should consider the use of vapor barriers and ventilation to control condensation.

Ind 63.12 DESIGN CRITERIA.

Subsection Ind 63.12 (1) (intro. par.) is amended to read:

(1) Thermal performance. The thermal performance values for the exterior envelope of the building shall ~~be as specified~~ not exceed those specified in Table 63.12-A.

Ind 63.20 EQUIPMENT EFFICIENCIES.

Subsection Ind 63.20 (1), Tables 63.20-A and 63.20-C only, are amended to read:

TABLE 63.20-A
MINIMUM EER AND COP FOR ELECTRIC HEATING, VENTILATING AND
AIR-CONDITIONING SYSTEM EQUIPMENT, COOLING MODE[†]

Standard Rating Capacity	EER		COP	
Under 65,000 Btu/hour (19,050 watts)	6.1	6.8	1.8	2.0
65,000 Btu/hour (19,050 watts) and over	6.8	7.5	2.0	2.2

[†]Adapted from Table 6.2, ASHRAE Standard 90-75, Energy Conservation in New Building Design (The American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., 345 East 47th St., New York, NY 10017).

TABLE 63.20-C
MINIMUM COP FOR HEAT PUMPS, HEATING MODE†

Source and Outdoor Temperature °F	Minimum COP	
Air Source (return air 70° F) 47 db/43 wb	2.2	2.5
Air Source (return air 70° F) 17 db/15 wb	1.2	1.5
Water Source 60 Entering (return air 70° F)	2.2	2.5

†Adapted from Tables 6.7 and 6.8, ASHRAE Standard 90-75, Energy Conservation in New Building Design (The American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., 345 East 47th St., New York, NY 10017).

Subsection Ind 63.20 (3), Table 63.20-D only, is amended to read:

TABLE 63.20-D
MINIMUM COP FOR HEATING, VENTILATING AND AIR CONDITIONING
SYSTEMS, HEAT-OPERATED COOLING EQUIPMENT†

Heat Source	Minimum COP	
Direct-fired (gas, oil)	0.40	0.48
Indirect-fired (steam, hot water)	0.65	0.68

†Adapted from Table 6.6, ASHRAE Standard 90-75, Energy Conservation in New Building Design (The American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc., 345 East 47th St., New York, NY 10017).

Subsection Ind 63.20 (4), Table 63.20-E only, is amended to read:

TABLE 63.20-E
MINIMUM COP FOR ELECTRICALLY DRIVEN HEATING, VENTILATING
AND AIR-CONDITIONING SYSTEM COMPONENTS

Component	Condensing Means	Air		Water		Evaporative	
		EER	COP	EER	COP	EER	COP
Self-Contained Water Chillers		7.8	2.3	13.6	4.0		
	Centrifugal	7.5	2.2	12.9	3.8	--	--
	Positive Displacement	7.5	2.2	11.6	3.4		
Condenserless Water Chillers	Positive Displacement	7.2	2.1	10.9	3.2	--	--
		9.5	2.8	11.6	3.4		
Compressor and Condenser Units 65,000 Btu/hour (19,050 watts and over)	Positive Displacement	8.9	2.6	10.9	3.2	--	--
		8.5	2.5	11.9	3.5	11.9	3.5
		7.8	2.3	11.3	3.3	11.3	3.3

†Adapted from Tables 6.4 and 6.5, ASHRAE Standard 90-75, Energy Conservation in New Building Design (The American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 345 East 47th St., New York, NY 10017).

Ind 63.21 CONTROLS.

Section Ind 63.21 (intro. par.) is repealed.

Subsection Ind 63.21 (1) (d) is amended to read:

(d) Heat pump supplemental heater. The heat pump shall be installed with a control to prevent ~~supplemental-heater-operation~~ simultaneous operation of a supplemental heater when the heating load can be met by the heat pump alone. A two-stage thermostat, which controls the supplementary heat on its second ~~stage~~ stage, will be accepted as meeting this requirement. The cut-on temperature for the compression heating shall be higher than the cut-on temperature for the supplementary heat, and the cut-off temperature for the compression heating shall be higher than the cut-off temperature for the supplementary heat.

Note: Supplemental heater operation is permitted during transient periods, such as start-ups, following room thermostat set point advance, and during defrost.

Section Ind 63.22 is amended to read:

Ind 63.22 INSULATION. (1) Air-handling duct insulation. All ducts, plenums and similar enclosures ~~installed-in-or-on~~ serving buildings shall be insulated as follows:

(a) All duct systems, or portions thereof, shall be insulated to provide a thermal resistance, excluding film resistances, of:

$$R = \frac{\Delta T}{15} \text{ H-Ft}^2\text{-F}^\circ\text{/Btu}$$

where ΔT = the design temperature differential between the air in the duct, plenum or similar enclosure and the surrounding ~~air~~ medium in $^\circ\text{F}$. For underground ducts, the temperature of the soil around the duct will be considered to be 30°F .

(b) Exceptions. Duct insulation is not required:

1. Where ΔT is 25°F or less;

2. When the heat gain or loss of the ducts, plenums and similar enclosures, without insulation, will not increase the energy consumption of the building.

(2) Pipe insulation. All piping within the buildings shall be thermally insulated to achieve at least the equivalent insulation values of Table 63.22. Minimum insulation thickness shall be increased for materials with thermal resistance less than $4.0 \text{ H-Ft}^2\text{-F}^\circ\text{/Btu/inch}$ or may be reduced for materials with thermal resistance greater than $4.6 \text{ H-Ft}^2\text{-F}^\circ\text{/Btu/inch}$.

Note: See section Ind 63.33 (2) for service water piping insulation.

(a) Exception. Piping insulation shall not be required where the fluid temperature is between 55°F and 120°F .

Table 63.22: The note preceding the table proper is amended to read:

(The thicknesses specified in this table are based on insulation having thermal resistance in the range of $4.0 \text{ H-Ft}^2\text{-F}^\circ\text{/Btu}$ to $4.6 \text{ H-Ft}^2\text{-F}^\circ\text{/Btu}$ per inch of thickness on a flat surface at a mean temperature of 75°F .)

Note to Revisor: There are no changes to the table proper.

Ind 63.23 COOLING WITH OUTDOOR AIR IN CONJUNCTION WITH MECHANICAL COOLING SYSTEMS (ECONOMIZER CYCLE).

Subsection Ind 63.23 (1) (a) is amended to read:

(a) Exception. Cooling with outdoor air is not required when the ~~fan-system capacity is less than 2,000 cfm or 60,000 Btu per hour total cooling capacity~~ cooling capacity of the fan system is less than 60,000 Btu per hour.

Note: It is the intent of this section to require cooling with outdoor air for nominal 5-ton installations or larger.

Ind 63.32 CONSERVATION OF HOT WATER.

Subsections Ind 63.32 (1) and (2) are amended to read:

(1) Showers. ~~Showers used for other than safety reasons shall be equipped with flow-control devices to limit total the flow to a maximum of 3 gallons per minute per shower-head~~ of water to not more than 3 gallons per minute per shower head.

(2) Lavatories. Lavatories (washbasins) in toilet rooms of nonresidential public buildings shall be equipped ~~with outlet devices which limit the flow of hot water to a maximum of 0.5 gallons per minute for mixing devices and a maximum of 1.0 gallon per minute for nonmixing devices~~ to limit the flow of water through the faucet, after the handle is released, to not more than one gallon. Lavatories in toilet rooms of private living units shall be equipped to limit the flow to not more than 3 gallons per minute.

Note: The requirements of (1) and (2) of this section will be enforced by the department of health and social services as they relate to plumbing fixtures and materials. The same rules will be included in Wis. Adm. Code chapter H 62--Design, Construction, Installation, Supervision and Inspection of Plumbing.

Part VI heading amended to read:

PART VI--ILLUMINATION AND ELECTRICAL SYSTEMS

Ind 63.40 DISTRIBUTION.

Subsection Ind 63.40 (1) is amended to read:

(1) Power factor. ~~Utilization~~ Building service utilization equipment rated greater than 1,000 watts and lighting equipment greater than 30 watts, with an inductive reactance load component, shall have a power factor of not less than 85% under rated load conditions. ~~Utilization~~ Building service utilization equipment with a power factor of less than 85% shall be corrected to at least 90% under rated load conditions.

CHAPTER IND 64--HEATING, VENTILATING AND AIR CONDITIONING

Ind 64.03 DESIGN.

Subsection Ind 64.03 (1) is amended to read:

(1) Building heat loss. The total building heat loss shall be equal to the sum of the building transmission losses and infiltration ~~and/or~~ or ventilation losses, whichever are greater.

Subsection Ind 64.03 (2) (a) is amended to read:

(a) Occupied periods. The heating system shall be designed to equal building transmission losses and infiltration ~~and/or~~ or ventilation losses during occupied periods; or

Ind 64.05 INSIDE DESIGN TEMPERATURES AND VENTILATION REQUIREMENTS.

Section Ind 64.05, Table 1, is amended to read: (see following page)

Ind 64.06 MECHANICAL VENTILATION SYSTEMS.

Subsection Ind 64.06 (3) (c) 2. is amended to read:

2. ~~Buildings containing large volume spaces of at least 5,000 cubic feet of air per occupant and~~ where the requirement for outside air is waived in accordance with section Ind 64.05 (2) (b).

Ind 64.09 COMBUSTION AIR INTAKES.

Subsection Ind 64.09 (1) (d) is amended to read:

(d) If the heating equipment is not required to be located in a fire-resistive room, combustion air may be provided by means of infiltration where the total area of ~~the~~ outdoor openings ~~(doors and windows)~~ is greater than 3% of the floor area in which the burner is located, or where 150% of the air required for theoretical complete combustion is no greater than 1/4 air change per hour.

Note: See section Ind 64.22 for special conditions.

Ind 64.18 CONTAMINATION OF AIR.

Subsection Ind 64.18 (1) (a) 3. is amended to read:

3. No ~~direct-fired~~ fuel-fired heating unit, with or without a heat exchanger, shall be located within this area, nor shall it recirculate air from this area.

Ind 64.19 LOCATION OF OUTSIDE VENTILATING AIR INTAKES OR EXHAUSTS FOR MECHANICAL VENTILATION SYSTEMS.

Subsection Ind 64.19 (1) (c) Note is amended to read:

Note: The department will accept outside air intakes in areaways provided the minimum horizontal cross section of the areaway is equal to the free area of the opening, a grating is provided over the areaway with a free area equal to the required air intake, and the grating is designed for a minimum of 100 psf live load. A guard-rail, as defined in section Ind 51.162, will be accepted in lieu of the grating.

TABLE 1 (CONTINUED)

Use or Occupancy	Minimum Inside Temp. (Deg. F)	Ventilation Requirements ¹				Applicable Occupancy Code Section (Ind No.)
		Ventilation Classification ²	Basis of Capacity		CFM/net Floor Area	
Determination of			% of Openings ⁴			
		Net sq. ft. per Person				
Schools and other places of instruction						
Administrative office space	67	(b)	75	3	--	64.56
Arts, crafts, drafting rooms	67	(a)	30	--	--	64.56 (3)
Classrooms	67	(a)	20	--	--	64.56
Gymnasiums, field houses, auditoriums, theaters (fixed seats)	55-67	(a)	6	--	--	64.56
Bleachers	--	(a)	2.75 or 18"/LF	--	--	64.56
Locker and shower rooms	70	(c) or (d)	--	--	2	64.56
Home economics (cooking)	67	(a)	30	--	--	64.56
Kitchens	67	(d)	--	--	200/CA	64.67
Laboratories (science)	60	(c) or (d)	--	--	2	64.67
Lecture halls	67	(a)	30	--	--	64.18
Lectures (science)	67	(a)	6	--	--	64.56
Lecture halls	67	(a)	20	--	--	64.56
Libraries and resource centers	67	(a)	20	--	--	64.56
Reading rooms	67	(a)	20	--	--	64.56
Stack areas	67	(a) or (d)	100	--	1/4	64.56
Lunchrooms	65	(a)	10	--	--	64.56
Museums and art galleries	67	(a)	40	--	--	64.56
Music rooms (instrumental)	67	(a)	20	--	--	64.56
(vocal)	67	(a)	10	--	--	64.56
Special education	67	(a)	35	--	--	64.56
Study halls, common areas with nonfixed seating	67	(a)	10	--	--	64.56
Toilet rooms	65	(d)	--	--	2 or 60/TF	64.56
Vocational shops:						
With vehicle service and repair	60	(c) or (d)	--	--	3/4	64.18
Without vehicle service and repair	60	(a)	50	--	--	64.18
Wardrobes	NMR	(d)	--	--	2	64.65
Penal institutions and places of detention						
Cells	67	(a)	--	--	--	64.58
Residential occupancies						
Living and sleeping areas	67	(f)	--	5	--	64.59
Day care facilities	67	(b)	35	5	--	64.60
Garages and service stations						
Automobile showrooms:						
Less than 6 vehicles	60	(b)	--	3	--	64.64
6 or more vehicles	60	(c) or (d)	--	--	1/2	64.64
Garages: 6 or more vehicles	NMR	(c) or (d)	--	--	1/2	64.63
Repair areas	60	(c) or (d)	--	--	3/4	64.61
Vehicle service buildings	60	(c) or (d)	--	--	1/2	64.62
General sanitation and service areas						
Chlorine storage rooms	NMR	(d)	--	--	1	64.65
Cloak rooms	NMR	(d)	--	--	2	64.65
Janitor closets	NMR	(d)	--	--	2	64.65
Locker rooms and shower rooms	70	(c) or (d)	--	--	2	64.65
Toilet rooms	65	(d)	--	--	2 or 60/TF	64.65
Natatoriums	76	(c)	--	--	1 or 2/pool sf	64.66
Kitchens	60	(c) or (d)	--	--	2	64.67
Seasonal occupancies						
Camps and lodges:						
Dining and recreational areas	NMR	(b)	15	3	--	64.68
Living and sleeping areas	NMR	(f)	--	5	--	64.68
Club houses	NMR	(b)	15	3	--	64.68
Drive-ins	NMR	(b)	15	3	--	64.68
Kitchens	NMR	(c) or (d)	--	--	2	64.67
Outdoor toilets	NMR	(d)	--	--	2	64.65

CA = Cooking appliance.

LF = Lineal foot.

NMR = No minimum requirements.

TF = Toilet facilities (water closets and urinals).

[†]See Theaters and places of assembly for inside design temperature and net square feet per person.

¹Ventilation requirements. See sections Ind 64.06, 64.07 and 64.08 for mechanical, natural and exhaust ventilation systems; and sections Ind 64.11 through 64.18 for ventilation and air standards.

²Ventilation classifications.

- (a) Requires a supply of outside air and an equal amount of exhaust ventilation be provided at the rate of 5 CFM per person.
- (b) Requires a supply of outside air and an equal amount of exhaust ventilation at the rate of 5 CFM per person, or a percentage of openings.
- (c) Requires a supply of outside air and exhaust determined on the basis of CFM per square foot of floor area.
- (d) Requires exhaust ventilation determined on the basis of CFM per square foot of floor area. The area shall be provided with negative pressure relative to adjacent areas. A supply of outside air is required when the total building exhaust exceeds one air change per hour, unless otherwise exempted. In multiple-use occupancies, the area of each occupancy shall be considered separately.
- (e) Requires a supply of outside air and exhaust determined on the basis of CFM per square foot of floor area. The area shall be provided with a negative pressure relationship with respect to adjacent areas.
- (f) Requires a percentage of openings.

³Determination of number of persons. In determining the number of occupants in a given space, the department will accept the net square feet per person as listed in Table 1 or the actual number of persons, provided the expected occupancy is indicated on the plans and is reasonable. Where no value is indicated for net square feet per person, use the actual number of occupants to determine the required amount of outside air.

⁴Percent of openings. See section Ind 64.07 for special considerations on natural ventilation.

Ind 64.23 PIPING.

Subsection Ind 64.23 (5) (a) is amended to read:

(a) Piping installations. All gas piping and all oil piping shall comply with the ~~standards accepted by the department~~ following standards:

1. National Fuel Gas Code, NFPA No. 54 [Ind 51.27 (7a)];
2. Installation of Oil-Burning Equipment, NFPA No. 31 [Ind 51.27 (7a)].

~~Note:--The department will accept gas piping installations which conform to NFPA No. 54 (ANSI Z223.1), National Fuel Gas Code; and oil piping installations which conform to NFPA No. 31, Oil-Burning Equipment.~~

Ind 64.33 UNDERGROUND DUCT CONSTRUCTION AND INSTALLATION.

Subsections Ind 64.33 (1) (b) and (2) are amended to read:

(b) Plastic and metal ducts. Metal, plastic-coated metal ducts, and other approved materials may be used for underground systems if encased in not less than 2 inches of concrete. The ducts shall be waterproof, noncombustible, smooth and of sufficient strength to prevent collapse. The sealing material for fittings and joints shall be approved by the department.

1. Exception. Solid polyvinyl ducts and fittings and polyvinyl chloride (pvc)-clad metallic ducts and fittings need not be encased in concrete provided the space around the ducts and fittings is backfilled with sand or similar fill material.

~~Note:--The department will accept polyvinyl ducts installed underground without concrete.~~

(2) Duct insulation. ~~Supply-air~~ Air ducts installed parallel and adjacent to an outside wall shall be insulated ~~with a moistureproof material (thermal conductance factor of .19-BTU-per-hour-per-square-foot-per-degree-Fahrenheit)~~ placed between the duct and outside wall. The insulation shall extend from the underside of the floor to 2 feet below the finished grade, in accordance with the requirements of section Ind 63.22 (1).

Ind 64.34 DUCT CONSTRUCTION.

Subsections Ind 64.34 (1) Note and (3) (intro. par.) are amended to read:

Note: The department will accept the standards for ducts in the ASHRAE Handbook of Fundamentals, published by the American Society of Heating, Refrigerating and Air Conditioning Engineers, or as illustrated in the Low Velocity Pressure or High Velocity Pressure Duct Construction Standards published by the Sheet Metal and Air Conditioning Contractors National Association, Inc.

(3) Nonmetallic ducts. Coated metal ducts or Ducts ducts constructed of other than metal shall conform to the following:

Section Ind 64.41 is repealed and recreated to read:

Ind 64.41 SUSPENDED CEILING PLENUM. (1) General. Plenums above ceilings used for the supply, return and transfer of air shall be of noncombustible construction as defined in section Ind 51.01 (86) (a).

(a) Exception. Combustible ceiling materials may be used provided they comply with the following:

1. The ceiling material is made from a base material of metal or mineral.
2. All surfaces of ceiling material possess a flame-spread rating of not over 25 without evidence of continued progressive combustion and with a smoke-developed rating of not higher than 50.
3. The ceiling material is supported by noncombustible material having a melting point above 1400° F (760° C).
4. The ceiling material is not subject to deterioration or deformation on long exposure to temperatures of 250° F (121° C) or under conditions of high humidity, excessive moisture, or mildew.

Note #1: This section permits the use of steel, painted steel bar joists and metal decking, concrete, plaster, and other noncombustible materials and restricts the use of certain combustible materials within air-handling plenums.

Note #2: The requirements for ceiling materials are based upon the National Fire Protection Association (NFPA) standard 90A, section 2-2.1.3.

(2) Ductwork within the plenum. Ducts within the plenum shall be constructed of metal in accordance with section Ind 64.34 (1) or approved nonmetallic materials in accordance with section Ind 64.34 (3).

(3) Duct connectors. Duct connectors shall comply with the requirements of section Ind 64.35.

Note: Flame-retardant fabric or metal or mineral listed in the Building Materials List, published by Underwriters' Laboratories, Inc., are acceptable.

(4) Insulating materials within the plenum. (a) Duct and pipe insulation. Duct and pipe insulation, including coverings, linings, tapes and core materials, shall have a flame-spread rating of not over 25 without evidence of continued progressive combustion, and a smoke-developed rating no higher than 50 when tested according to ASTM E-84 standard tests. If coverings and linings are to be applied with adhesives, they shall be tested as applied with such adhesives, or the adhesives used shall have a flame-spread rating not over 25 and a smoke-developed rating no higher than 50 when in the final dry state.

(b) Building envelope insulation. Building envelope insulation within the plenum space shall have a flame-spread rating of 25 or less and a smoke-developed rating of 50 or less when tested according to ASTM E-84 test standards. The use of foam plastics, satisfying the requirements of section Ind 51.06, for envelope insulation is permitted provided the foam plastic is protected by a thermal barrier as specified in section Ind 51.06 (3) (b) 2.

(5) Hazardous piping. The installation of hazardous piping as defined in section Ind 51.01 (102) is prohibited in the plenum space.

(6) Openings. Openings into the plenum that would affect the fire-resistive rating of the roof and ceiling are prohibited.

(7) Wiring and cables. Electric wiring, including low-voltage wiring, and telephone cables within the plenum space shall be installed according to the Wis. Adm. Code, Electrical, Vol. 2.

(8) Plumbing. Plumbing within the plenum shall be of noncombustible material.

(a) Exception. Plastic plumbing pipe and fittings may be used provided the plastic material is of the self-extinguishing type with an average extent of burn not greater than 10 mm and an average time of burn not greater than 20 seconds when tested according to ASTM D-635. The plastic material shall be wrapped with at least one inch of inorganic insulation or enclosed with 1/2-inch type X gypsum wallboard.

(9) Control tubing. Plastic control tubing shall have an average extent of burn not greater than 10 mm and an average time of burn not greater than 20 seconds when tested according to ASTM D-635.

(10) Smoke detection. (a) New construction. Air-handling plenums which contain ductwork, duct connectors, insulation or plumbing which do not meet the requirements of (2)-(4) and (8), respectively, of this section, shall be provided with an approved smoke detection system acceptable to the department and shall be capable of stopping the air flow in and from the plenum and giving an audible alarm in the occupied area when activated.

(b) Existing construction. When existing plenum construction contains combustible insulation, wiring or plumbing, and is altered or added to according to section Ind 50.03 (1) or (2), the entire plenum space, new and existing, shall be provided with a smoke detection system according to (10)(a) of this section.

1. Exception. Building additions separated from existing construction by one-hour noncombustible construction need not be provided with a smoke detection system provided the plenum is constructed according to (1)-(8) of this section.

Note: The department will accept smoke detection systems designed, installed and maintained in accordance with National Fire Protection Association standard No. 72E.

Ind 64.42 FIRE DAMPERS AND FIRE CURTAIN DOORS.

Subsection Ind 64.42 (3) Note #3 is amended to read:

Note #3: See section Ind ~~64.66~~ 64.67 for fire damper requirements in kitchen exhaust systems.

Ind 64.45 CHIMNEYS, SMOKE STACKS, GAS VENTS, MECHANICAL DRAFT AND VENTING DEVICES.

Subsection Ind 64.45 (1) is amended to read:

(1) General requirements. Heating equipment using solid, liquid or gas fuels shall be vented to the outside, except as permitted in section Ind 64.21. A natural draft chimney or other venting device shall have the height and area to remove the products of combustion. Chimneys, smoke stacks, gas vents, mechanical draft and venting devices shall comply with the requirements of NFPA No. 211 [Ind 51.27 (7a)], Chimneys, Fireplaces and Vents.

Subsection Ind 64.45 (3) (a) is amended to read:

(3) Termination. (a) Gravity type. 1. All chimneys or ~~vents~~ smokestacks depending on a gravity principle for the removal of the products of combustion shall extend at least 3 feet above the highest point where the chimneys ~~and or vents~~ smokestacks pass through the roof of the building, and at least 2 feet higher than any ridge, peak or wall within 10 feet of the chimney or smokestack.

2. Type "B", "BW" and "L" vents and single wall vent pipes depending on a gravity principle for the removal of the products of combustion shall extend at least 2 feet above the highest point where the vents or pipes pass through the roof of the building, and at least 2 feet higher than any ridge, peak or wall within 10 feet of the vent or pipe.

Ind 64.46 MASONRY CHIMNEYS.

Subsection Ind 64.46 (1) is amended to read:

(1) Materials. The wall shall be built of brick or other approved fire-resistive material. No chimney shall rest upon a flooring of wood nor shall any wood be built into or in contact with any chimney. Combustible headers, beams, joists and studs shall be located at least 2 inches from the outside face of a chimney. The foundation shall be designed and built in conformity with the requirements for foundations for buildings. In no case shall a chimney be corbeled out more than 8 6 inches from the wall and in every case the corbeling shall consist of at least 5 courses of brick.

Section Ind 64.50 is amended to read:

Ind 64.50 GAS VENTS. All gas ranges (except those for domestic use), water heaters and other gas-fired equipment shall be provided with vent pipes conforming to the requirements for gas vents as specified in section Ind 64.48 ~~or~~ and for smoke pipes as specified in section Ind 64.49.

Ind 64.51 GUARDING AND FIRE PROTECTION.

Subsection Ind 64.51 (2) is amended to read:

(2) Guarding of surfaces. Equipment located in occupied areas and installed less than 7 feet above the floor shall be guarded to prevent contact with surfaces that are likely to cause lacerations.

Subsections Ind 64.51 (2) (a) and (b) are repealed.

Ind 64.57 HOSPITALS AND NURSING HOMES.

Subsection Ind 64.57 (2) (d) is repealed.

Ind 64.62 VEHICLE SERVICE BUILDINGS.

Subsection Ind 64.62 (2) (b) (intro. par.) is amended to read:

(b) Vehicle washing facilities. Buildings or portions of buildings having a capacity of and used exclusively for washing 2 or more vehicles simultaneously shall be ~~supplied-and-exhausted-with-a-volume-of-outside-air-equal-to~~ exhausted at not less than 1/2 cubic foot per minute per square foot of floor area. A supply of makeup air is not required for this exhaust.

Ind 64.67 KITCHENS.

Subsection Ind 64.67 (2) (a) is amended to read:

(a) Required exhaust ventilation. When cooking equipment is being operated, mechanical exhaust ventilation shall be provided at a rate not less than 2 cubic feet per minute per square foot of floor area for every occupied area within the scope of this section. When cooking equipment is not being operated, a minimum supply of outside air and exhaust at the rate of 5 CFM per person shall be provided during periods of occupancy.

Subsection Ind 64.67 (4) is repealed.

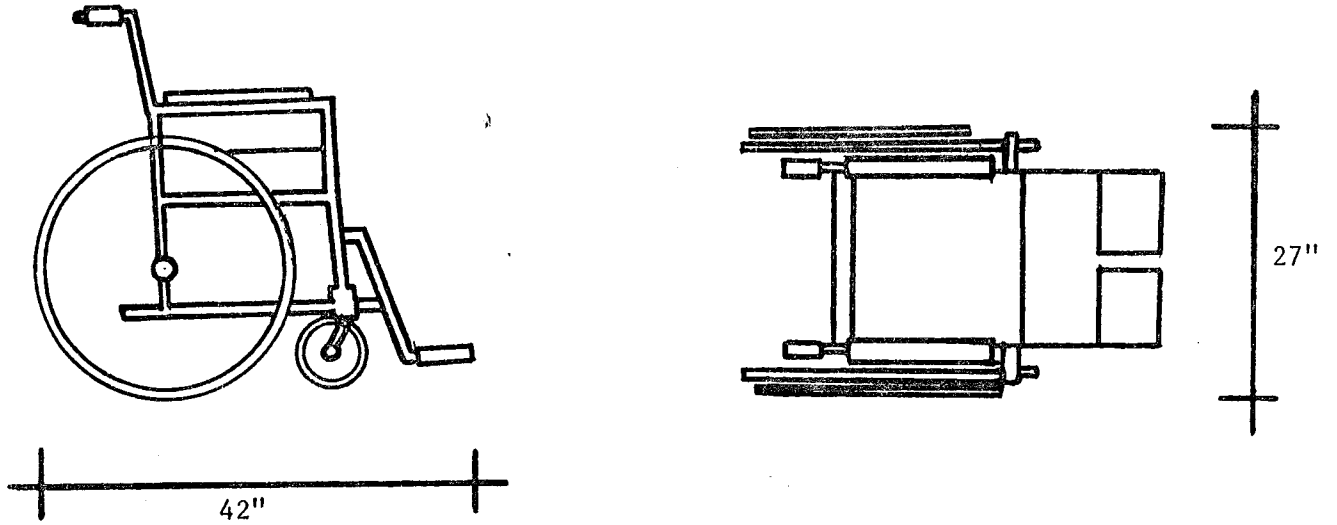
Subsection Ind 64.67 (5) is renumbered 64.67 (4).

Subsection Ind 64.67 (6) is renumbered 64.67 (5).

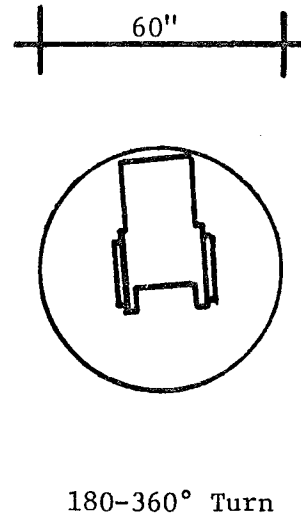
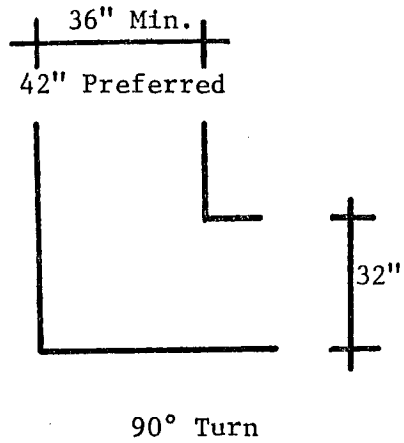
APPENDIX

A-52.04 REQUIREMENTS FOR BARRIER-FREE ENVIRONMENTS. The following illustrations are provided to give the designer visual aids for making facilities accessible.

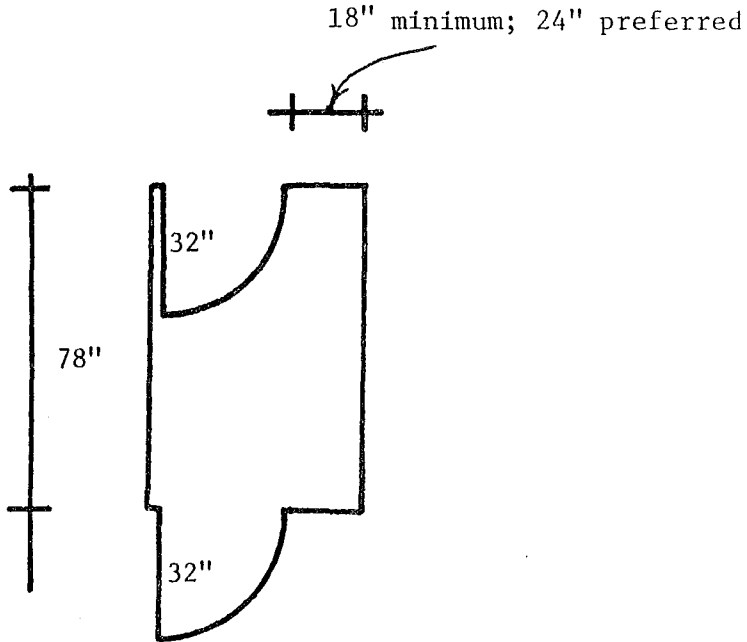
WHEELCHAIR DIMENSIONS



TURNING SPACE

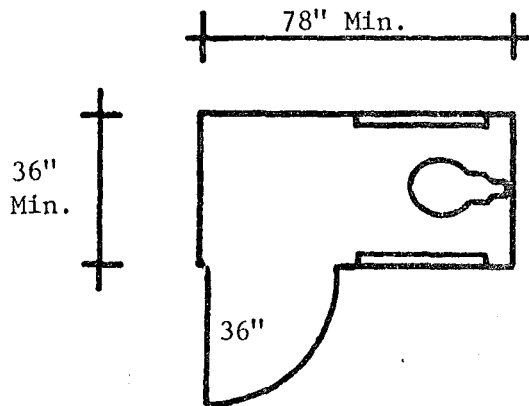


DOORS IN SERIES



Doors in series should be hinged on the same side and should swing in the same direction. A minimum of 18 inches of clear space should be provided on the door knob side of the door. The length of the vestibule should be a minimum of 78 inches.

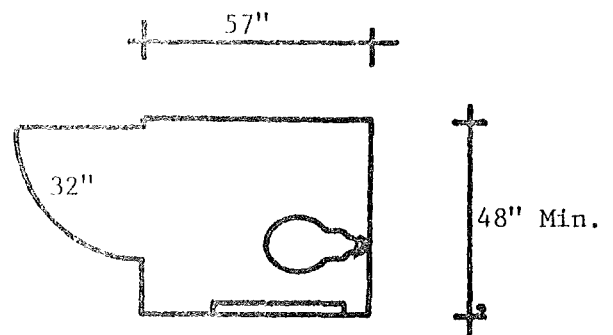
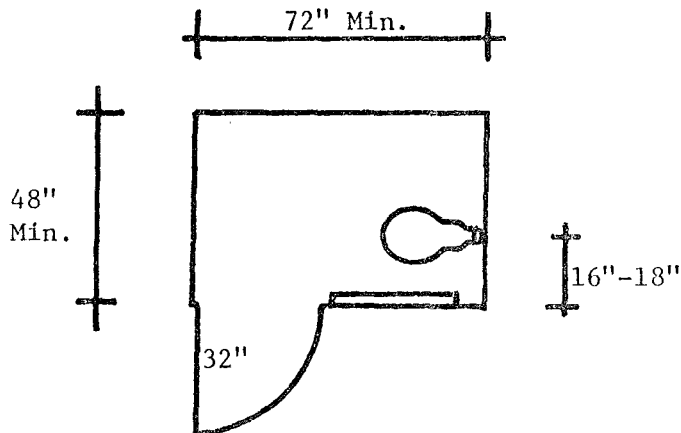
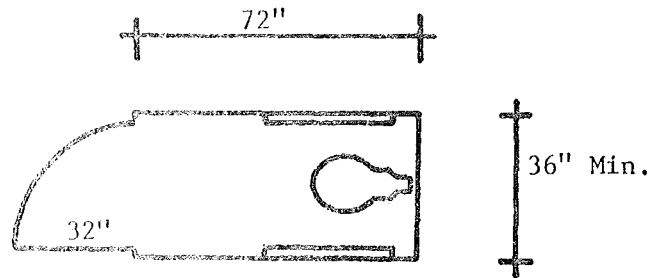
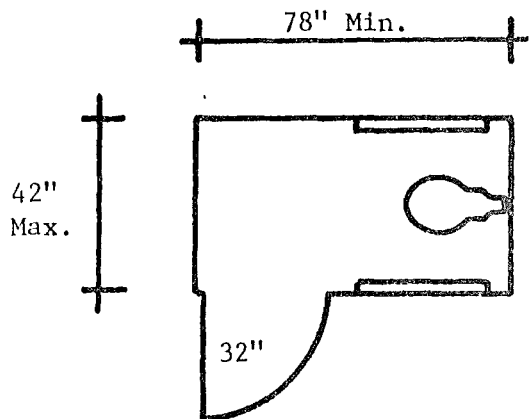
EXAMPLES OF ACCESSIBLE TOILET COMPARTMENTS
AS SPECIFIED IN TABLE 52.04-A



Recommended fixtures:

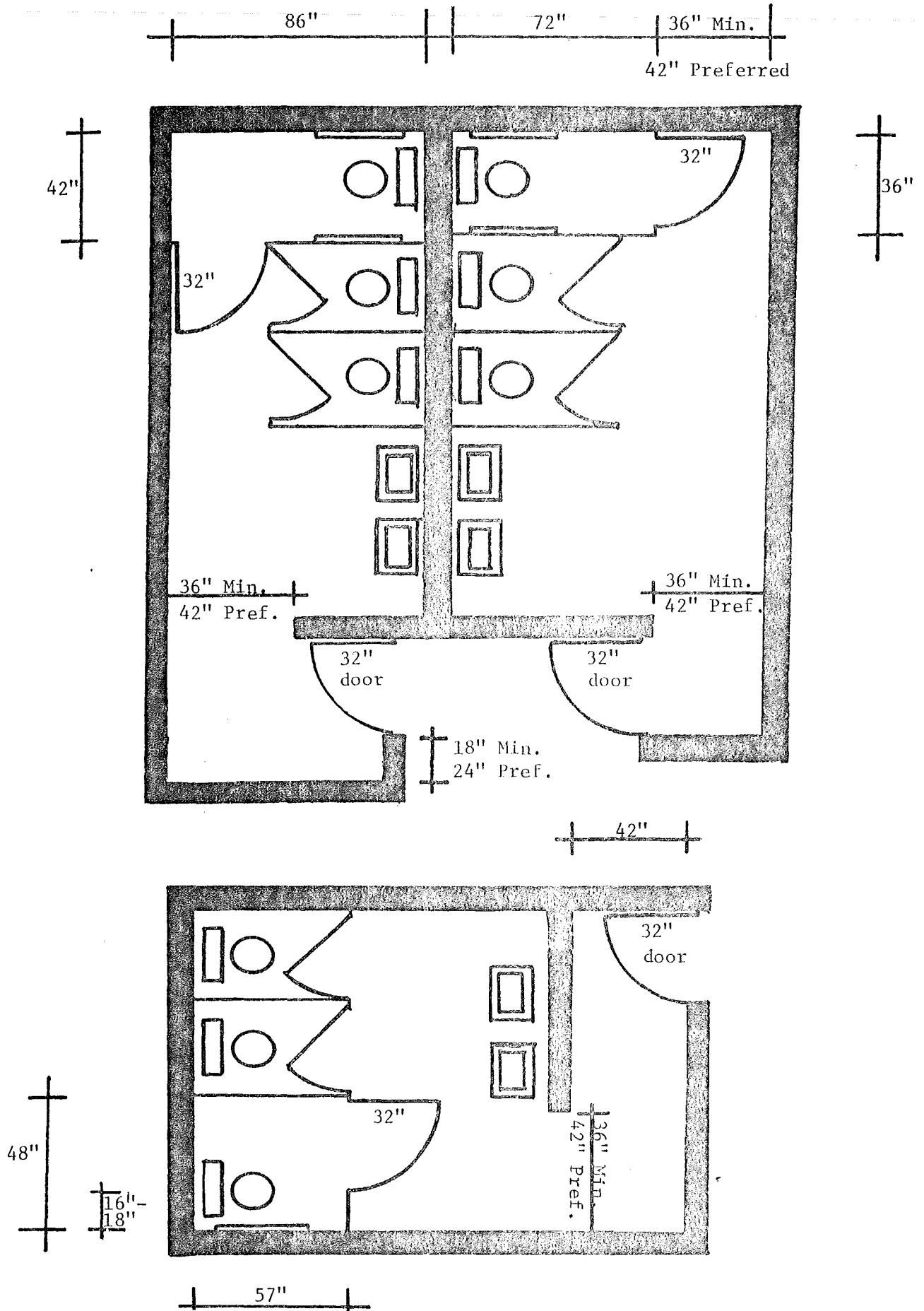
1. Elongated bowl;
2. Wall mounted.

Note: These are examples of toilet room compartments which are located within accessible toilet rooms.

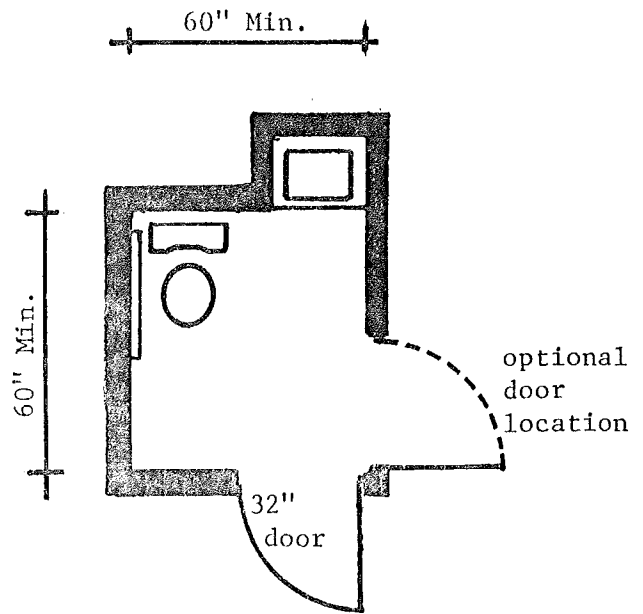
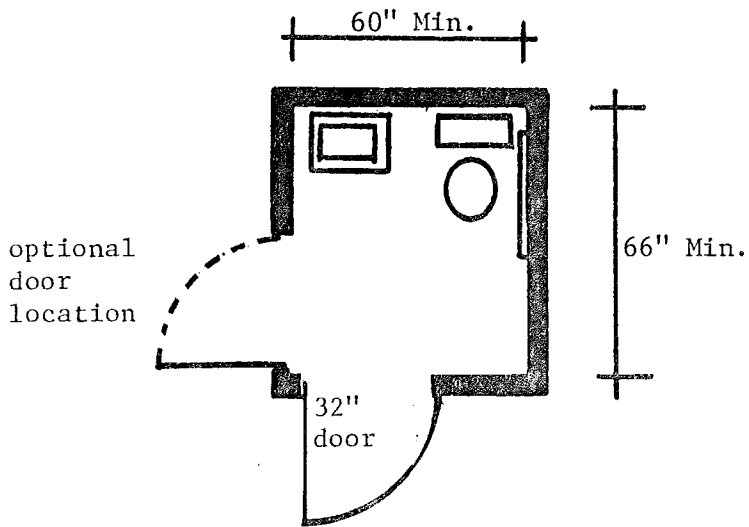
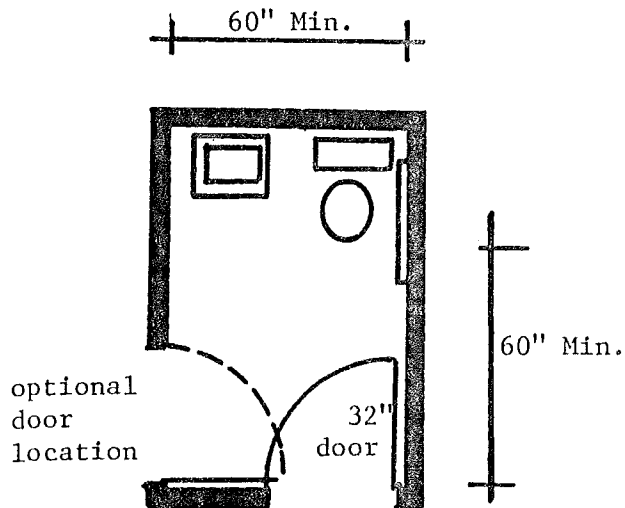


The door of the 48" x 57" water closet compartment having a frontal approach should not align with the placement of the water closet.

EXAMPLES OF ACCESSIBLE TOILET ROOMS



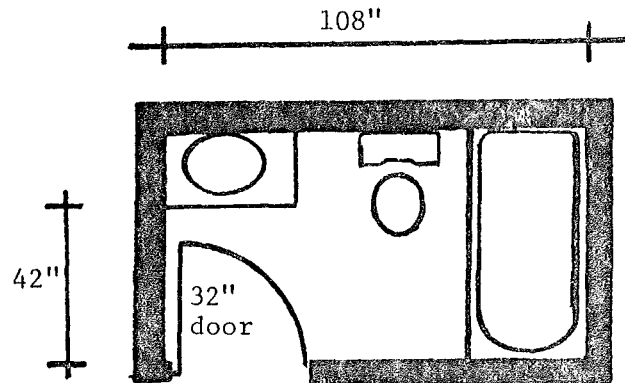
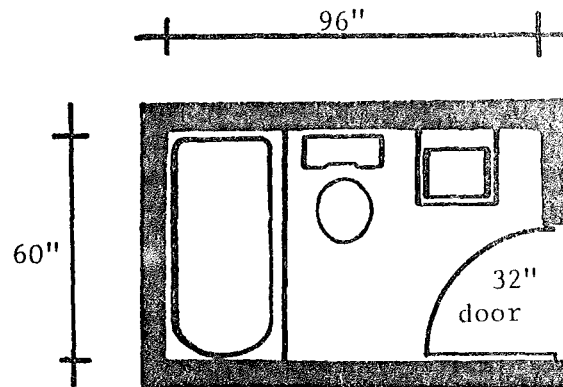
EXAMPLES OF ACCESSIBLE TOILET ROOMS
CONTAINING ONE LAVATORY AND ONE WATER CLOSET



Note #1: These examples of accessible toilet rooms may be used in health care facilities in that sufficient room for the attendant is provided.

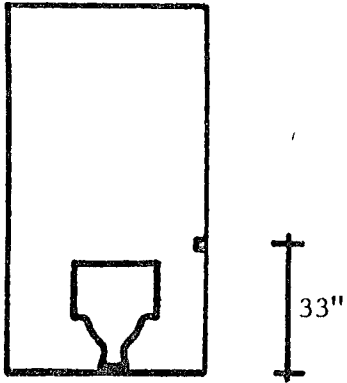
Note #2: These examples may be modified by substituting pocket sliding doors for the swing doors shown in the examples. Surface-mounted hardware is recommended for pocket sliding doors.

EXAMPLES OF ADAPTABLE BATHROOM LAYOUTS
FOR RESIDENTIAL LIVING UNITS
(not including hotels and motels)

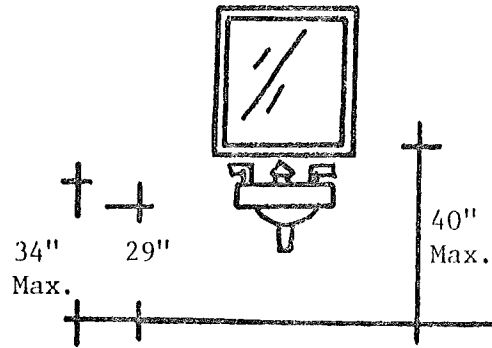
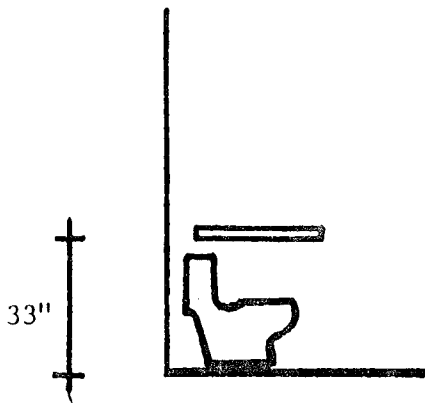


These examples may be modified for accessibility by using outward swinging doors or pocket sliding doors.

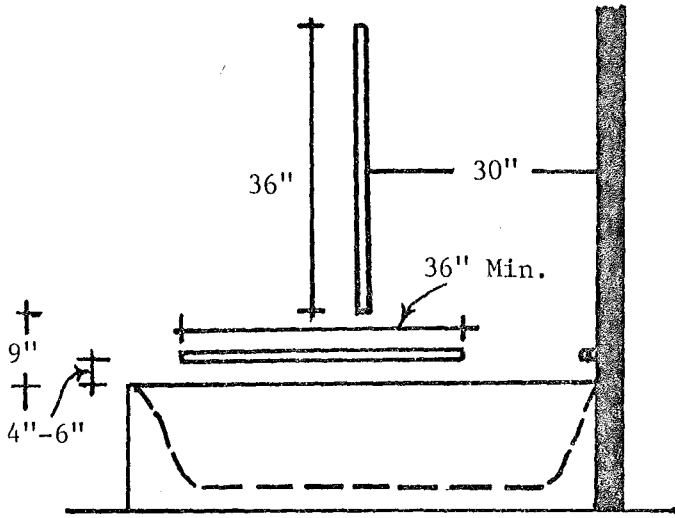
ACCESSIBLE TOILET ROOMS



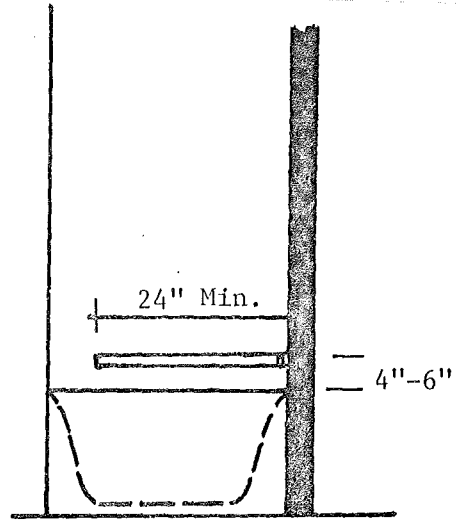
It is recommended that grab bars be from 30 to 42 inches in length and located no more than 12 inches from the back wall.



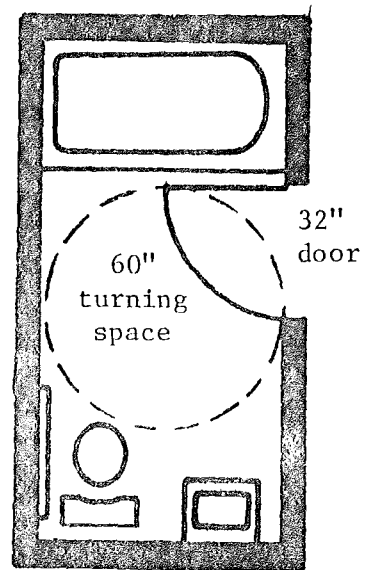
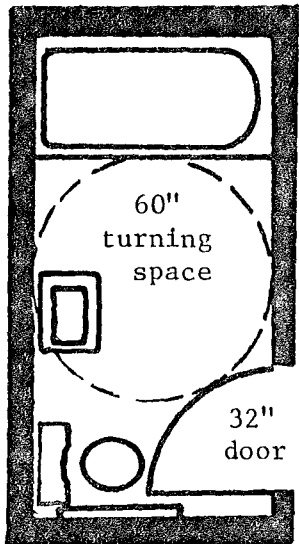
ACCESSIBLE BATHING FACILITIES



Side Elevation - Bathtub

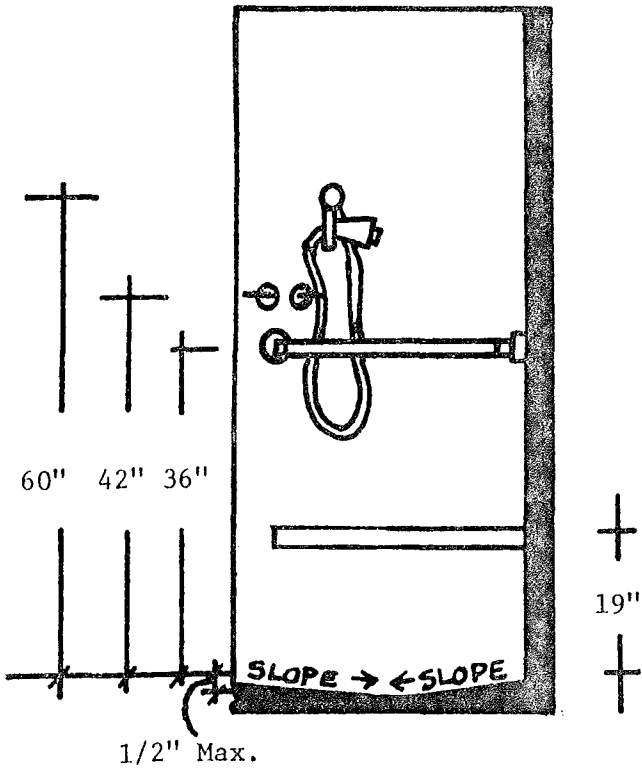


End Elevation - Bathtub

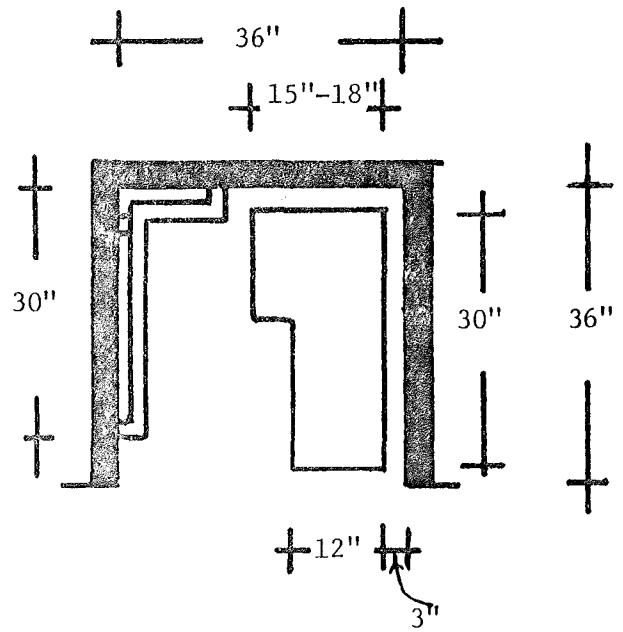


These diagrams are examples of accessible bathrooms which may be used for motels, hotels, hospitals and nursing homes.

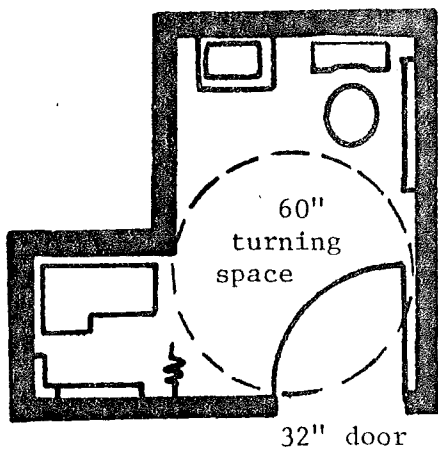
ACCESSIBLE BATHING FACILITIES



Section View - Shower

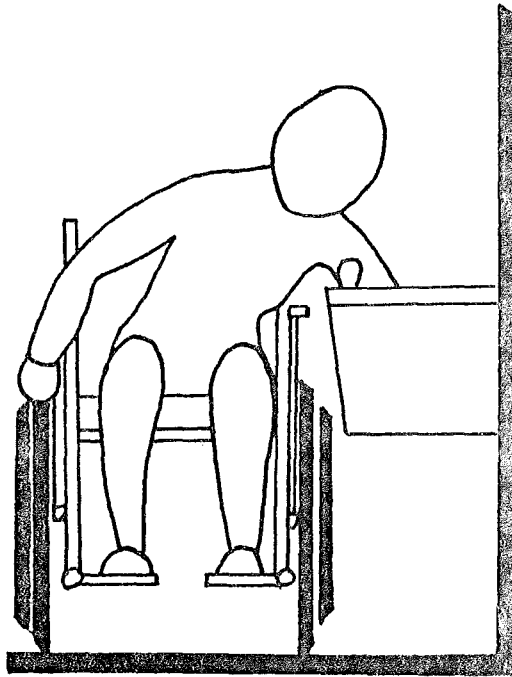


Plan View - Shower



EXAMPLES OF ACCESSIBLE WATER COOLERS

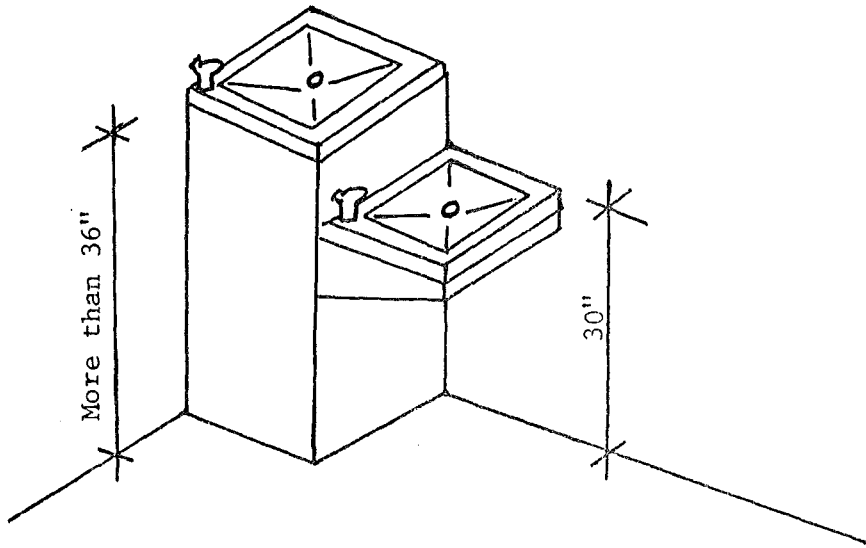
Note: Conventional floor-mounted water coolers can be serviceable to patrons with functional limitations if a small fountain is mounted on the side of the cooler 30 inches above the floor. Fully recessed water fountains are not recommended and should not be recessed in an alcove unless the alcove is wider than the wheelchair.



30" preferred for seated persons and children

34" preferred for seated or standing persons

36" maximum for seated persons



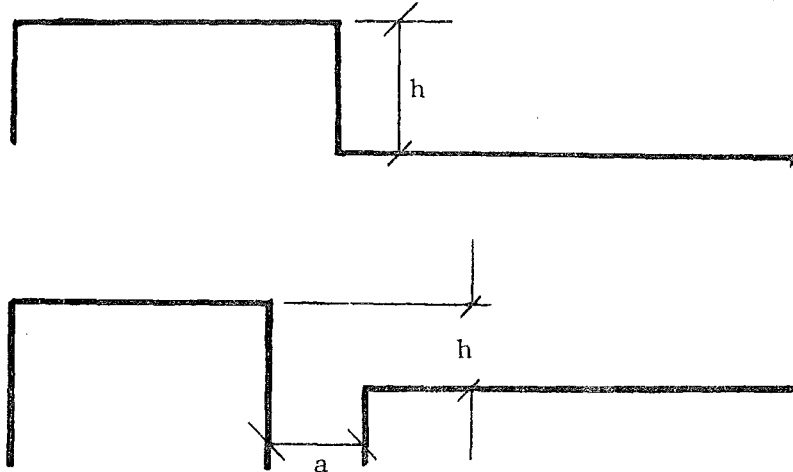
Floor-mounted water cooler with side-mounted cooler



INTERNATIONAL SYMBOL FOR BARRIER-FREE ENVIRONMENTS

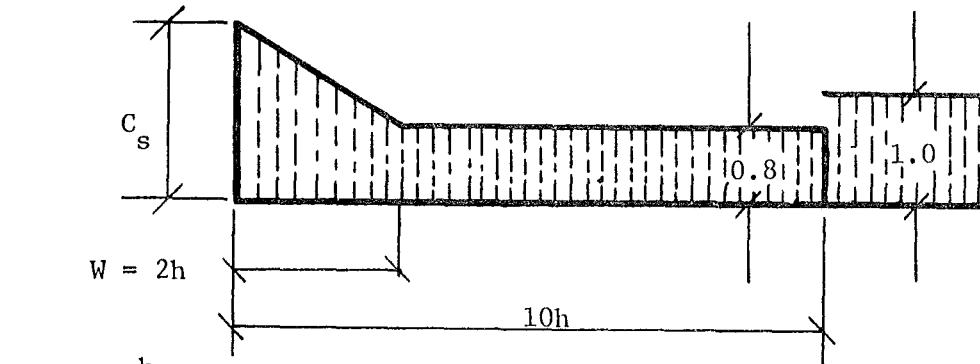
A-53.11 (4) (d). The following design provisions may be used to determine the nonuniform snow loads as required by this section.

ROOF SHAPES



Lower level of multi-level roofs (when upper roof is part of the same building or on an adjacent building not more than 15 feet away).

SNOW LOAD DISTRIBUTIONS AND COEFFICIENTS, LIMITATIONS



$$C_s = 15 \frac{h}{g}$$

when $15 \frac{h}{g} < 1.0$ use $C_s = 1.0$

when $15 \frac{h}{g} > 3.0$ use $C_s = 3.0^*$

$$W = 2 h$$

when $h < 5$ ft use $W = 10$

$h > 15$ ft use $W = 30$

h = difference of roof heights in ft.

g = roof live load in psf [Ind 53.11 (4)]

w = width of drift from higher building in ft.

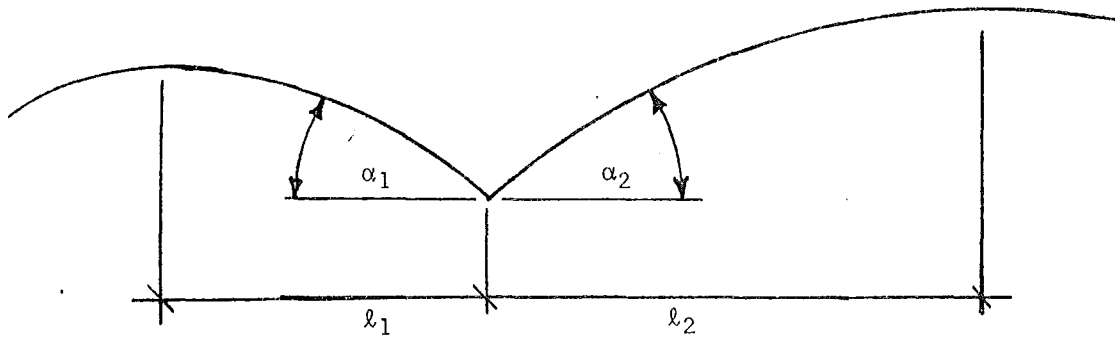
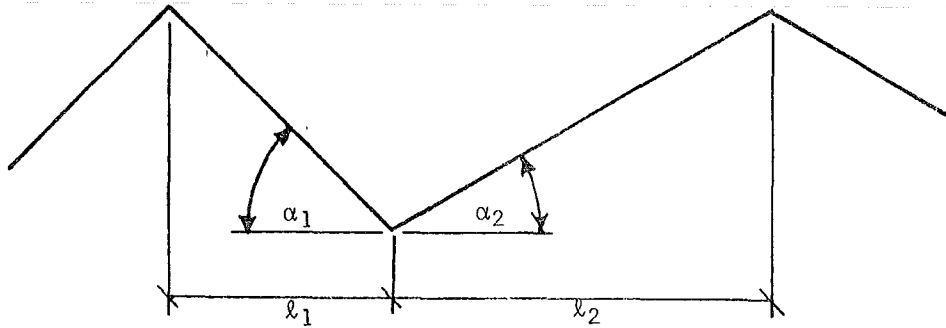
a = distance between buildings < 15 ft.

Design upper roof for loads applicable to single-level roofs.

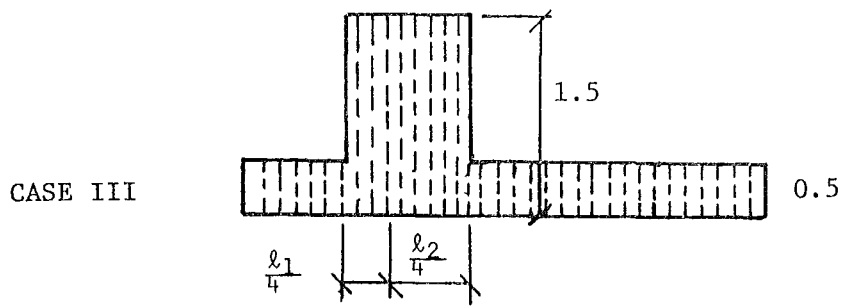
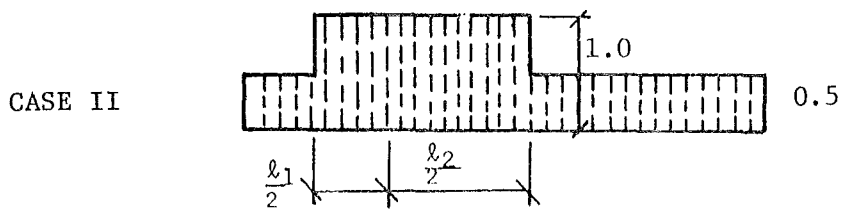
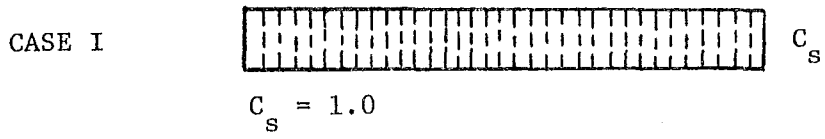
*An upper limit of 3 times the basic roof load has been suggested. It should be noted, however, that higher loads have been observed where an upper roof was very long (measured perpendicularly to the step between the upper and lower roofs). On the other hand, for relatively short upper roofs (say less than 50 ft), a reduction below the calculated C_s value may be judged adequate by the designer.

ROOF SHAPES

Valley areas of two-span and multi-span sloped or curved roofs

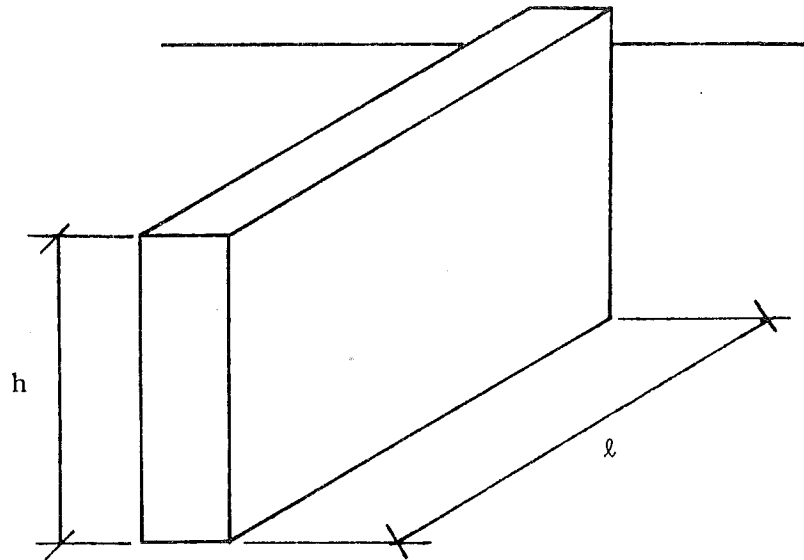


SNOW LOAD DISTRIBUTIONS AND COEFFICIENTS, LIMITATIONS



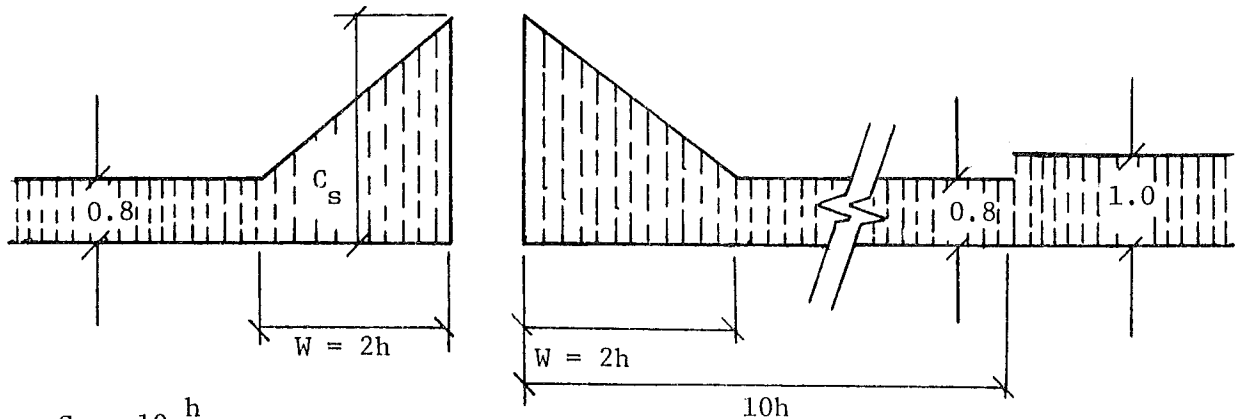
For both α_1 and $\alpha_2 \leq 10^\circ$ use Case I only; otherwise use Case I, II and III

ROOF SHAPES



Roof areas adjacent to projections and obstructions on roofs

SNOW LOAD DISTRIBUTIONS AND COEFFICIENTS, LIMITATIONS



$$C_s = 10 \frac{h}{g}$$

when $10 \frac{h}{g} < 1.0$ use $C_s = 1.0$

when $10 \frac{h}{g} > 2.0$ use $C_s = 2.0$

when $l < \frac{g}{6}$ use $C_s = 1.0$

$$W = 2h$$

when $h < 5$ ft use $W = 10$

when $h > 15$ ft use $W = 30$

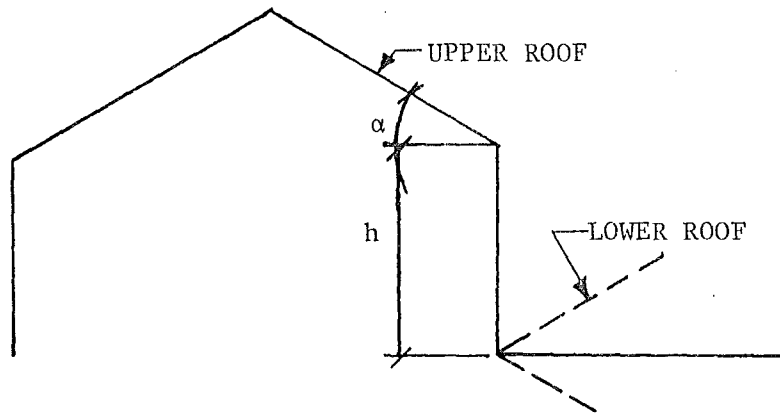
h = height of projection in ft.

g = roof live load in psf

w = width of snow drift in ft.

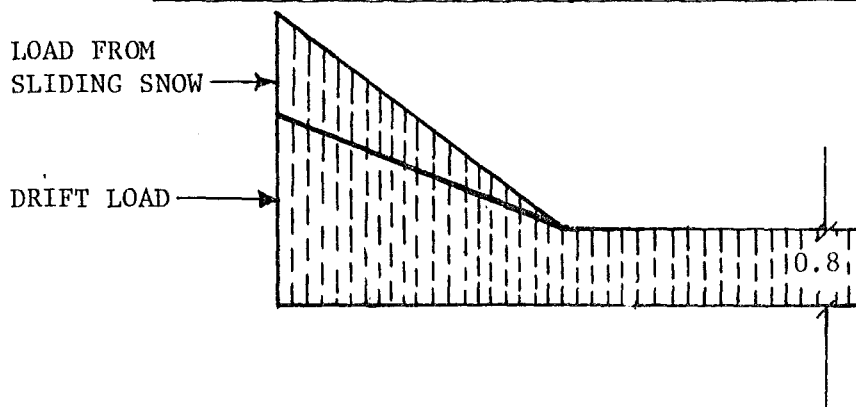
l = length of projection in ft.

ROOF SHAPES



Lower of multi-level roofs with upper roof sloped towards lower roof, where α exceeds 10° .

SNOW LOAD DISTRIBUTIONS AND COEFFICIENTS, LIMITATIONS



Design lower roof for loads applicable to multi-level roof plus a portion of the sliding snow from the upper roof.*

Design upper roof for loads applicable to single-level roofs.

*Where snow is likely to slide onto a lower roof from an upper roof, the lower roof should be designed for the load as provided for multi-level roofs plus an additional load produced by the snow that may slide from the upper roof. It is not possible to provide coefficients for this situation, but the following guide is recommended. Because of the remote probability that both upper and lower roofs will have their full load over the full areas simultaneously when sliding occurs, it may be assumed that the lower roof would be carrying its full load and that sliding of 50% of the total weight of the applicable uniformly distributed snow load from the upper roof would occur.

63
A-64.20 EQUIPMENT RATINGS AND SAFETY CONTROLS.

Subsection (3) (n) is amended to read:

(n) HEATING EQUIPMENT, ELECTRIC BASEBOARD, UL 1042 (for residential use only);

INDEX

See also first page of each chapter for listing of section headings.

NOTE: An asterisk (*) following a subject reference indicates further requirements will be found in the "occupancy chapters" of the code--chapters Ind 54 through 62.

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