

TABLE 64.21--LOCATION OF EQUIPMENT

Location and type of Occupancy	VENTED UNITS						UNVENTED UNITS		ELECTRIC Furnaces, Unit Heaters, Heat Pumps, Baseboard Heaters, etc.	WATER OR STEAM Unit Ventilators, Heaters, Makeup Air Units, Baseboard Heaters, etc.
	Gas or Oil or Solid Fuel Boilers	Gas or Oil or Solid Fuel Furnaces	Gas or Oil Unit Heater	Gas or Oil Infrared	Gas or Oil Space Heater	Solid Fuel Space Heater or Fireplace <sup>1</sup>	Gas Dir. Fired Makeup Air <sup>1</sup>	Gas Infrared		
Type of Occupancy	Rated Enclosure	Rated Enclosure	Suspended or Guarded <sup>2</sup>	Suspended or Guarded <sup>2</sup>	Suspended or Guarded <sup>2</sup>		Suspended or Guarded <sup>2</sup>	Suspended or Guarded <sup>2</sup>		
Factories	Yes	Yes <sup>2</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Mercantile buildings	Yes	Yes	Yes	Yes	Yes	N.P. <sup>3</sup>	Yes	N.P.	N.P.	
Office Buildings	Yes	Yes	Yes	Yes	N.P.	Yes	Yes	N.P.	N.P.	
Places of assembly, entertain- ment, recreation, worship or dining (100 persons or less)	Yes	Yes	Yes	Yes	Yes	N.P. <sup>3</sup>	N.P. <sup>3</sup>	N.P. <sup>4</sup>	N.P.	
Tennis facilities (court areas only)	Yes	Yes	Yes	Yes	Yes	N.P.	N.P.	N.P.	N.P.	
Tennis facilities (all other areas)	Yes	Yes	N.P. <sup>5</sup>	N.P. <sup>5</sup>	N.P.	N.P.	Yes	N.P.	N.P.	
Theaters & places of assembly, entertainment, recreation, worship or dining (more than 100 persons)	Yes	Yes	N.P.	N.P.	N.P.	N.P.	N.P. <sup>3</sup>	N.P. <sup>5</sup>	N.P.	
Restaurants	Yes	Yes	N.P.	N.P.	N.P.	N.P.	N.P. <sup>3</sup>	N.P. <sup>5</sup>	N.P.	
Tennis facilities (court areas only)	Yes	Yes	Yes	Yes	Yes	N.P.	N.P.	N.P.	N.P.	
Tennis facilities (all other areas)	Yes	Yes	N.P. <sup>5</sup>	N.P. <sup>5</sup>	N.P.	N.P.	Yes	N.P.	N.P.	
Schools & other places of Instruction	Yes	Yes	N.P. <sup>6</sup>	N.P. <sup>6</sup>	N.P.	N.P.	N.P.	N.P. <sup>6</sup>	N.P.	
Hospitals, nursing homes & penal institutions	Yes	Yes	N.P.	N.P.	N.P.	N.P.	N.P. <sup>7</sup>	N.P.	N.P.	
Residential occupancies	Yes	Yes	N.P.	N.P.	N.P.	N.P.	N.P. <sup>8</sup>	N.P.	N.P.	
Hazardous Occupancies										
Garages	Yes	Yes	Yes <sup>9</sup>	Yes <sup>9</sup>	Yes <sup>9</sup>	N.P. <sup>13</sup>	N.P. <sup>14</sup>	Yes <sup>9</sup>	Yes <sup>9</sup>	
Aircraft hangars	Yes	Yes	Yes <sup>10</sup>	Yes <sup>10</sup>	Yes <sup>10</sup>	N.P.	N.P.	Yes <sup>10</sup>	Yes <sup>10</sup>	
Day care centers	Yes <sup>15</sup>	Yes <sup>12</sup>	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	
Community Based Residential Facilities <sup>16</sup>	Yes	Yes	N.P.	N.P.	N.P.	N.P.	Yes	N.P.	N.P.	

N.P. = Not Permitted

Unlisted occupancies - Use the listed occupancy in the table that is most similar to the subject occupancy.

Clearances - Equipment shall be installed in accordance with the clearance from combustibles indicated in the name plate of the unit.

- Direct-fired makeup air units shall be mechanically exhausted in the range of 90% to 110% of the air supplied.
- Where permitted, such equipment shall be located in an occupied space (see s. Ind 64.22 (3)) and suspended at least 7 feet above the floor or guarded to maintain clearances to combustibles and prevent accidental damage. Suspension of solid-fuel fired equipment is not permitted. Central furnaces with 400,000 Btu/hr or greater fuel input rating must be enclosed. See s. Ind 54.14 (3) for additional requirements.
- Permitted in occupancies less than 1500 square feet gross area with combustion air ducted to unit.
- Permitted in kitchens to provide makeup air for kitchen exhaust systems if located outside building or in a rated enclosure.
- Spectator areas in tennis facilities may be served by suspended equipment located in court areas.
- Permitted only in shops with a 4-hour separation from other parts of the building.
- Fireplaces may be installed and used only in areas other than patient sleeping areas provided those areas are separated from the patient sleeping areas by construction having at least a one-hour fire-resistive rating. The fireplace shall be equipped with safety screens and a heat tempered glass fireplace enclosure capable of withstanding temperatures up to 650° F.
- Gas-fired, direct-vent wall furnaces are permitted in apartments and hotels.
- Suspended heating units are allowed in garages if located at least 8 feet off the floor. Suspension of solid-fuel fired equipment is not permitted.
- Suspended heating units are allowed if located at least 10 feet above the upper surface of the wings or engine enclosure of the aircraft. Suspension of solid-fuel fired equipment is not permitted.
- All solid-fuel fired space heaters and fireplaces shall be located in occupied space or in a space provided with approved smoke detectors and located or guarded to maintain clearances to combustibles and prevent accidental damage or contact with hot surfaces. Solid-fuel burning stoves are limited to 150,000 Btu/hr output.
- Solid-fuel fired space heaters and fireplaces are permitted in rowhouse units. Masonry fireplaces with or without inserts and built-in factory-built fireplace-type units only are permitted in all other residential occupancies.
- Waste oil burners are permitted provided they are installed on mezzanines or service platforms located at least 8'-0" above the main floor, are visible from the main floor and are guarded as specified in this section.
- Solid-fuel burning devices are permitted provided they are installed on mezzanines or service platforms located at least 8'-0" above the main floor, are visible from the main floor and are guarded as specified in this section.
- See s. Ind 60.25 for smoke detector alternative.
- See s. Ind 61.24 for requirements.

(5) **SPACE HEATERS.** Space heaters shall comply with the following provisions:

(a) The burner of the appliance shall be enclosed with a metal housing so constructed that there will be no open flame and the burner housing shall be effectively guarded against personal contact. The arrangement shall be such that the shield will prevent any combustible material in the vicinity of the appliance from coming in contact with the flame or with the housing that encloses the burner. Oil-fired space heaters shall be equipped with a mechanical pressure atomizing burner; and

(b) Space heaters shall not be equipped with duct extensions beyond the vertical and horizontal limits of the metal enclosure.

(6) **EQUIPMENT IN HAZARDOUS LOCATIONS.** The types of heating and ventilating equipment that may be installed in hazardous locations (as defined in Article 500 of the National Electrical Code) are as follows:

(a) Listed low-pressure steam or hot water unit heaters and makeup air units; and

(b) Listed electric units.

(7) **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—Standard for Chimneys, Fireplaces and Vents.

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

a. Where a lining of low-duty firebrick complying with the provisions of ASTM C64, or the equivalent, at least 2 inches thick laid-in fire-clay mortar complying with the provisions of ASTM C105, or the equivalent, or other approved lining is provided, the total thickness of back and sides, including the lining, shall be not less than 8 inches.

b. Where the lining described in subpar. a. is not provided, the thickness of back and sides shall be not less than 12 inches.

2. Steel fireplace units incorporating a firebox liner of not less than ¼ inch thick steel and an air chamber shall be installed with masonry to provide a total thickness at the back and sides of not less than 8 inches, not less than 4 inches of which shall be solid masonry.

3. Warm air ducts employed with steel fireplace units of the circulating air type shall be constructed of metal or masonry.

4. Fireplace hearth extensions of approved noncombustible material for all fireplaces shall be provided.

a. Where the fireplace opening is less than 6 square feet, the hearth extension shall extend at least 16 inches in front of, and at least 8 inches beyond each side of the fireplace opening.

b. 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.

Standard No. 211 unless listed for installation at other clearances. Clearances shall be measured from the outer surface of the appliance or connector to the combustible material, disregarding any intervening protection applied to the combustible material. Appliances shall not be installed in alcoves or closets unless approved for such installations.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76; am. (2), Register, December, 1976, No. 252, eff. 1-1-77; am. (2), Register, January, 1980, No. 289, eff. 2-1-80; am. (4), Register, December, 1981, No. 312, eff. 1-1-82.

Table 64.51-A  
 Standard Installation Clearances, Inches, for Heat Producing Appliances  
 (See Note 1.)

These clearances apply unless otherwise shown on listed appliances. Appliances shall not be installed in alcoves or closets unless so listed. For installation on combustible floors, see note 2.

Residential-Type Appliances <sup>11</sup> For Installation in Rooms Which Are Large (See Note 3)		APPLIANCE					
		Above Top of Casing or Appliance	From Top and Sides of Warm-Air Bonnet or Plenum	From Front See Note 4	From Back	From Sides	
Boilers & Water Heaters Steam Boilers-15 psi Water Boilers-250° F. Water Heaters-200° F. All Water Walled or Jacketed	Automatic Oil or Comb. Gas-Oil	6	--	24	6	6	
	Automatic Gas	6	--	18	6	6	
	Solid	6	--	48	6	6	
	Electric	6	--	18	6	6	
Furnaces-Central Gravity, Upflow, Downflow, Horizontal and Duct. Warm-Air--250° F. Max.	Automatic Oil or Comb. Gas-Oil	6 <sup>5</sup>	6 <sup>5</sup>	24	6	6	
	Automatic Gas	6 <sup>5</sup>	6 <sup>5</sup>	18	6	6	
	Solid	18 <sup>6</sup>	18 <sup>6</sup>	48	18	18	
	Electric	6 <sup>5</sup>	6 <sup>5</sup>	18	6	6	
Furnaces-Floor For Mounting in Combustible Floors	Automatic Oil or Comb. Gas-Oil	36	--	12	12	12	
	Automatic Gas	36	--	12	12	12	
	Electric	36	--	12	12	12	
Heat Exchanger Steam-15 psi Max. Hot Water-250° F. Max.		1	1	1	1	1	
Room Heaters Circulating Type Vented or Unvented	Oil or Solid Gas	36	--	24	12	12	
	Gas	36	--	24	12	12	
	Oil or Solid Gas	36	--	36	36	36	
	Gas	36	--	36	18	18	
	Radiant or Other Type Vented or Unvented	Gas With Double Metal or Ceramic Back	36	--	36	12	18
Radiators Steam or Hot Water	Gas	36	--	6	6	6	
Ranges-Cooking Stoves Vented or Unvented Clothes Dryers Listed Incinerators Residential Type	Oil	30	--	--	9	24 18	
	Gas	30	--	--	6	6 6	
	Solid--Clay Lined Firepot	30	--	--	24	24 18	
	Solid--Unlined Firepot	30	--	--	36	36 18	
	Electric	30	--	--	6	6 6	
	Gas	6	--	24	6	6	
Electric	6	--	24	0	0		
		See Note 10		48	36	36	
		36	--				
Building Heating <sup>12</sup> and Low Heat <sup>13</sup> Appliances Any and All Physical Sizes Except as Noted	APPLIANCE						
		Above Top of Casing or Appliance See Note 8	From Top and Sides of Warm-Air Bonnet or Plenum	From Front	From Back See Note 8	From Sides See Note 8	
	Boilers & Water Heaters 100 cu ft or less Any psi Steam 50 psi or less Any Size	All Fuels	18	--	48	18	18
		All Fuels	18	--	48	18	18
	Unit Heaters Floor Mounted or Suspended-Any Size	Steam or Hot Water	1	--	--	1	1
		Oil or Comb. Gas-Oil	6	--	24	18	18
		Gas	6	--	18	18	18
		All Fuels	18	--	48	18	18
	Suspended-100 cu ft or less Suspended-100 cu ft or less Suspended-Over 100 cu ft Floor Mounted-Any Size	All Fuels	18	--	48	18	18
		All Fuels	18	--	48	18	18
	Ranges--Restaurant Type Floor Mounted	All Fuels	48	--	48	18	18
	Other Low-Heat Appliances Floor Mounted or Suspended	All Fuels	18	18	48	18	18
Commercial Industrial Type Medium-Heat Appliances	APPLIANCE						
		Above Top of Casing or Appliance See Note 9	From Top and Sides of Warm-Air Bonnet or Plenum	From Front	From Back See Note 9	From Sides See Note 9	
	Boilers & Water Heaters Over 50 psi Over 100 cu ft	All Fuels	48	--	96	36	36
		All Fuels	48	36	96	36	36
	Other Med.-Heat Industrial Appliances All Sizes	All Fuels	48	--	96	36	36
		All Fuels	48	--	96	36	36
	Incinerators All Sizes		48	--	96	36	36
			48	--	96	36	36
	Industrial Type High-Heat Appliances						
	High-Heat Industrial Appliances All Sizes	All Fuels	180	--	360	120	120

Footnotes to Table 64.51-A

1. Standard clearances may be reduced with protection for combustible material according to Table 64.51-B.

2. An appliance may be mounted on a combustible floor if the appliance is listed for installation on a combustible floor, or if the floor is protected according to Table 64.51-C.

3. Rooms which are large in comparison to the size of the appliance are those having a volume equal to at least 12 times the total volume of a furnace and at least 16 times the total volume of a boiler. If the actual ceiling height of a room is greater than 8 ft., the volume of a room shall be figured on the basis of a ceiling height of 8 ft.

4. The minimum dimension should be that necessary for servicing the appliance including access for cleaning and normal care, tube removal, etc.

5. For a listed oil, combination gas-oil, gas, or electric furnace this dimension may be 2 in. if the furnace limit control cannot be set higher than 250° F. or this dimension may be 1 in. if the limit control cannot be set higher than 200° F.

6. The dimension may be 6 in. for an automatically stoker-fired forced warm-air furnace equipped with 250° F. limit control and with barometric draft control operated by draft intensity and permanently set to limit draft to a maximum intensity of 0.13 in. water gauge.

7. To combustible material or metal cabinets. If the underside of such combustible material or metal cabinet is protected with asbestos mill-board at least ¼ in. thick covered with sheet metal of not less than No. 28 gauge the distance may be not less than 24 in.

8. If the appliance is encased in brick, the 18 in. clearance above and at sides and rear may be reduced to not less than 12 in.

9. Clearance above charging door shall be not less than 48 in.

10. Residential-type appliances are fuel-burning and electric appliances (except high pressure boilers for generating steam in excess of 15 psig or for heating water in excess of 250° F. or above 160 psig), for heating building spaces having a volume of not more than 25,000 cubic feet, and other heat-producing appliances of the type mainly used in residences, but which may be used in other buildings, such as cooking stoves and ranges, clothes dryers, fireplace stoves, domestic incinerators, laundry stoves, water heaters and heat pumps.

11. Building heating appliances are fuel-burning and electric boilers, operating at not over 50 psig pressure, central furnaces, and heaters intended primarily for heating spaces having a volume exceeding 250,000 cubic feet.

12. A low heat appliance such as a commercial cooking range, bake oven, drying and curing appliance, and other process appliances in which materials are heated or melted at temperatures (excluding flue-gas temperatures) not exceeding 600° F.

TABLE 64.51-B  
CLEARANCES, INCHES, WITH SPECIFIED FORMS OF PROTECTION<sup>1,2</sup>

Type of Protection Applied to the combustible material unless otherwise specified and covering all surfaces within the distance specified as the required clearance with no protection. Thicknesses are minimum.	Where required clearance with no protection is <sup>3</sup>											
	36 inches			18 inches			12 inches		9 inches	6 inches		
	Above	Sides & Rear	Chimney or Vent & Con- nector	Above	Sides & Rear	Chimney or Vent & Con- nector	Above	Sides & Rear	Chimney or Vent & Con- nector	Above	Sides & Rear	Chimney or Vent & Con- nector
(a) 0.013 in. (28 gage) sheet metal spaced out 1 in . .	18	12	18	9	6	9	6	4	4	2	2	2
(b) 0.027 in (22 gage) sheet metal on 1 in. mineral fiber batts reinforced with wire or equivalent . . .	18	12	12	4	3	3	2	2	2	2	2	2
(c) 3-1/2 in (actual) solid masonry spaced out 1 in. and attached as specified in s. Ind 53.36 . . . . .	18	18	18	9	9	9	6	6	4	2	2	2
(d) Other products and systems as approved by the department (see s. Ind 50.19) .	----- Subject to the conditions of the individual approval -----											

<sup>1</sup> All clearances should be measured from the outer surface of the appliance to the combustible material disregarding any intervening protection applied to the combustible material.

<sup>2</sup> This table is based upon Table 2-2.1 of NFPA Manual 89M-1976; however, all references to asbestos have been deleted to correspond with policy changes approved by NFPA.

<sup>3</sup> If a table heading is not available for a specific required clearance without protection, use the next highest heading.

TABLE 64.51-C

FLOOR PROTECTION<sup>1</sup>

Appliance Leg Length	Protection Required
6 inches or more	No. 24 U.S. Gage (0.025 in.) sheet metal
Less than 6 inches	No. 24 U.S. Gage (0.025 in.) sheet metal over 4 inches of hollow masonry laid to provide air circulation through the masonry.

<sup>1</sup>This protection is required over floors containing combustible construction, including noncombustible flooring over combustible joists. The amount or type of floor protection depends on the appliance leg length. The floor protection shall extend at least 12 inches to the sides and rear of the appliance and 18 inches beyond sides having a door or similar opening.

TABLE 64.51-D

## CHIMNEY CONNECTOR AND VENT CONNECTOR CLEARANCES FROM COMBUSTIBLE MATERIALS (See Note 3)

Description of Appliance	Minimum Clearance (Inches)
<b>Single-Wall Metal Pipe Connectors</b>	
Gas Appliances Without Draft Hoods	18
Electric, Gas, and Oil Incinerators	18
Oil- and Solid-fuel Appliances	18
Unlisted Gas Appliances With Draft Hoods	9
Boilers and Furnaces Equipped With Listed Gas Burners and With Draft Hoods	9
Oil Appliances Listed as Suitable for Use with Type L Venting Systems, but Only When Connected to Chimneys	9
Listed Gas Appliances with Draft Hoods (See Note 2)	6
<b>Type L Vent Piping Connectors</b>	
Gas Appliances Without Draft Hoods	9
Electric, Gas and Oil Incinerators	9
Oil- and Solid-Fuel Appliances	9
Unlisted Gas Appliances With Draft Hoods	6
Boilers and Furnaces Equipped With Listed Gas Burners and With Draft Hoods	6
Oil Appliances Listed as Suitable for Use With Type L Vents	(See Note 1)
Listed Gas Appliances With Draft Hoods	(See Note 2)
<b>Type B Gas Vent Piping Connectors</b>	
Listed Gas Appliances With Draft Hoods	(See Note 2)

<sup>1</sup> If listed type L venting system piping is used, the clearance may be in accordance with the venting system listed.

<sup>2</sup> If listed type B or type L venting system piping is used, the clearance may be in accordance with the venting system listing.

<sup>3</sup> The clearances from connectors to combustible materials may be reduced if the combustible material is protected in accordance with Table 64.51-B or s. Ind 64.50 (1) (b).

**Ind 64.52 Maintenance and operation. (1) MAINTENANCE.** All heating, ventilating, exhaust and air conditioning systems shall be maintained in good working order and shall be kept clean and sanitary. Chimneys or vents and connectors serving solid-fuel burning appliances shall be cleaned and inspected for damage annually. Chimneys and vents, which have been subjected to a chimney fire, shall not be reused until inspected and approved by the department or authorized deputy.

(2) **OPERATION.** All heating, ventilating and exhaust systems shall be operated to satisfy the requirements of this chapter during periods the building is occupied.



(3) **INSTRUCTIONS.** The designer or installer shall provide the owner with written instructions for the operation and maintenance of the system and equipment.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76; am. (1), Register, December, 1981, No. 312, eff. 1-1-82.

**Ind 64.53 Final test required.** The designer, installer or recognized balancing agency shall be responsible for the testing and balancing of every heating, ventilating and air conditioning system.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76.

## PART VIII—OCCUPANCY REQUIREMENTS

**Ind 64.54 Factories, office and mercantile buildings.** (1) **SCOPE.** This classification shall include all places of employment, mercantile buildings, retail establishments where goods and commodities are bought and sold, and places where not more than 100 persons assemble for worship, recreation, entertainment or dining purposes.

**Note:** For mall corridors of enclosed mall shopping centers, see s. Ind 64.05, Table 1.

(2) **VENTILATION.** The air movement, supply and distribution for all occupancies in this class shall conform to the requirements of s. Ind 64.05, Table 1, except that natural ventilation or mechanical ventilation need not be provided in warehouses and cold storage buildings.

(3) **INDUSTRIAL EXHAUST SYSTEM.** (a) *Contaminants.* Industrial exhaust systems shall be installed and operated to remove harmful contaminants in conformance with chs. Ind 1000-2000—Safety and Health Code. Wis. Adm. Code.

(b) *Makeup air.* A volume of outside air shall be supplied to replace the air exhausted if the total volume of air exhausted exceeds one air change per hour. The quantity of makeup air shall equal at least 90% of the air exhausted.

(c) *Connections.* Connections between industrial exhaust systems that convey different materials, the combination of which may produce explosive, heat-generating, corrosive, toxic, or otherwise dangerous mixtures, shall be prohibited.

(4) **LOCKER ROOMS.** Locker rooms used in places of industrial employment shall be provided with outside air. See s. Ind 64.05, Table 1.

**Note:** Exhaust air from locker rooms may be directed through the adjoining toilet room or shower room.

(5) **FIRST AID REST ROOMS IN PLACES OF EMPLOYMENT.** Ventilation shall be provided for all areas of this class to conform to the requirements of s. Ind 64.05, Table 1.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76.

**Ind 64.55 Theaters and places of assembly.** (1) **SCOPE.** This classification shall include auditoriums, arenas, armories, assembly halls, banquet halls, billiard rooms, bowling alleys, cafeterias, club rooms, dance halls, dining rooms, gymnasiums, lecture halls, lodge halls, playrooms, restaurants, school auditoriums, Sunday schools and places of worship,

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funeral home chapels, parochial schools, convents, indoor skating rinks, and theaters which accommodate more than 100 persons for entertainment, recreation, worship, or dining purposes.

**Note:** For areas that will accommodate less than 100 persons, see s. Ind 64.64.

(2) **VENTILATION.** The air movement, supply and distribution for all occupancies under this classification shall conform to the requirements of s. Ind 64.05, Table 1.

(3) **ALTERNATE SERVICE AND CAPACITY.** Heating and ventilating systems installed in places of worship, Sunday schools, so-called community buildings and lodge halls may be arranged for selective delivery of the entire service to either the first floor area or to the basement floor area provided these areas are not used simultaneously.

(4) **STAGES.** The stage in any theater or assembly hall, for which a fire curtain is required, shall be supplied with sufficient air or other means to equalize the pressure to avoid deflecting the curtain.

**History:** Cr. Register, December, 1976, No. 240, eff. 1-1-76.

**Ind 64.56 Schools and other places of instruction.** (1) **SCOPE.** This classification shall apply to all public and private schools, colleges, universities, academies, seminaries, libraries, museums, art galleries, all places used for vocational instruction and research such as laboratories, shops, science rooms, and all parts of buildings used for instructional purposes.

(2) **VENTILATION.** The air movement, supply and distribution for all occupancies under this classification shall conform to the requirements of s. Ind 64.05, Table 1. For corridors provided with lockers, the air movement shall be not less than 10 cubic feet per minute per lineal foot of corridor. This air supply shall be accomplished by means of air inlets admitting air from adjacent classrooms or by a direct tempered air supply.

**Note:** This rule does not apply to corridors furnished with coat hooks.

(3) **EXHAUST SYSTEMS AND HEAT RECOVERY.** (a) An exhaust system, as specified in s. Ind 64.54 (3), shall be provided for all equipment and processes that create dust, fumes, vapors and gases injurious to health.

(b) Exhaust systems whose operation is more than 3600 hours per year shall be equipped with heat recovery devices to reduce the energy consumption in the building.

1. **Exception.** a. Systems exhausting explosive materials, such as perchloric acid need not be so equipped.

b. Fan systems exhausting 250 CFM or less need not be so equipped.

**History:** Cr. Register, December, 1976, No. 240, eff. 1-1-76; am. (3), Register, December, 1976, No. 262, eff. 1-1-77; am. (3), Register, December, 1981, No. 312, eff. 1-1-82.

**Ind 64.57 \*Health care facilities.** (1) **SCOPE.** The rules of this section apply to hospitals, nursing homes and outpatient surgical facilities where medical services are provided.

\*See Appendix A for further explanatory material.

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(2) GENERAL. Except as specified in sub. (3), the heating, ventilating and air conditioning systems of all occupancies within the scope of this section shall be designed, operated and maintained as specified in sections 7.31 A to D, 8.19 A to D, 9.11 A to D, 10.29 A to D, 14.9 A to C or 15.13 A to D, depending upon the occupancy, of the Minimum Requirements for Construction and Equipment for Hospitals and Medical Facilities, DHEW publication No. (HRA) 79-14500, revised August, 1979. In addition, the system shall be designed, operated and maintained as specified in the applicable sections of the following standards as referenced in DHEW publication No. (HRA) 79-14500, revised August, 1979:

(a) Installation of Air Conditioning and Ventilating Systems, NFPA No. 90A;

(b) Standard for Air Filter Equipment, ARI Standard 680;

(c) ASHRAE Handbook of Fundamentals;

(d) Methods of Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter, ASHRAE Standard No. 52; and

(e) Factory Made Air Duct Material and Air Duct Connectors, UL Standard No. 181.

(3) AMENDMENTS AND DELETIONS TO DHEW PUBLICATION NO. (HRA) 79-14500. Requirements of DHEW publication No. (HRA) 79-14500 pertaining to the following topic areas have been amended or deleted as indicated:

(a) Fans serving exhaust systems may be located at the discharge end of the system or within one story or 15 feet of the discharge end of the system.

Note: See DHEW publication No. (HRA) 79-14500 section 7.31 D (2) (intro) for general hospitals, 8.19 D (3) (intro) for long-term care facilities, 9.11 D (2) (intro) for outpatient facilities, 10.29 D (3) (intro) for rehabilitation facilities or 15.13 D (2) (intro) for outpatient surgical facilities.

(b) The bottom of outdoor air intakes shall be as specified in s. Ind 64.19.

Note: Also see DHEW publication No. (HRA) 79-14500 sections 7.31 D (2) (b) for general hospitals, 8.19 D (3) (a) for long-term care facilities, 10.29 D (3) (a) for rehabilitation facilities or 15.13 D (2) (b) for outpatient surgical facilities.

(c) The following portion of sections 7.31 D (2) (l) for general hospitals, 8.19 D (3) (h) for long-term care facilities, 10.29 D (3) (h) for rehabilitation facilities and 15.13 D (2) (i) for outpatient surgical facilities of the DHEW publication No. (HRA) 79-14500 is not adopted by reference: "except that all systems, regardless of size, which serve more than one smoke or fire zone, shall be equipped with smoke detectors to shut down fans automatically as delineated in paragraph 4-3.2 of that standard."

(d) The smoke damper at duct penetrations, if located above a smoke barrier door, may be arranged to close upon detection of smoke by the

local device designed to detect smoke on either side of the smoke barrier door opening.

**Note:** See DHEW publication No. (HRA) 79-14500 sections 7.31 D (2) (l) for general hospitals, 8.19 D (3) (h) for long-term care facilities, 10.29 D (3) (h) for rehabilitation facilities or 15.13 D (2) (k) for outpatient surgical facilities.

(e) Sections 7.31 D (2) (r) for general hospitals, 8.19 D (3) (j) for long-term care facilities, 10.29 D (2) (j) for rehabilitation facilities and 15.13 D (2) (k) for outpatient surgical facilities of DHEW publication No. (HRA) 79-14500 pertaining to work station temperatures in boiler rooms are not adopted by reference in this section.

(4) **APPLICATION OF RULES.** Where other sections of ch. Ind 64 specify different requirements than those contained in this section, the requirements specified in this section shall govern.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76; r. (2) (d), Register, January, 1980, No. 289, eff. 2-1-80; r. and recr., Register, February, 1982, No. 314, eff. 3-1-82.

**Ind 64.58 Penal institutions and places of detention. (1) SCOPE.** This classification shall include corridors and areas of compulsory occupancy in penal institutions, mental hospitals and other places of detention.

(2) **VENTILATION.** The air movement, supply and distribution for all areas of this class shall conform to the requirements of s. Ind 64.05, Table 1.

(3) **OVERNIGHT LOCK-UPS.** Where cells are provided for not more than 6 occupants for the purpose of overnight detention only, exhaust ventilation shall be provided on the basis of 6 air changes per hour for the occupied area.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76; am. (2), Register, December, 1981, No. 312, eff. 1-1-82.

**Ind 64.59 Residential occupancies. (1) SCOPE.** This classification shall include all apartments, row houses, rooming houses, hotels, motels, dormitories, and all other places of abode.

**Note:** See s. Ind 51.01 (102a) for definition of "place of abode."

(2) **VENTILATION.** The air movement, supply and distribution for all areas of this class shall conform to the requirements of s. Ind 64.05, Table 1.

(a) **Exception.** For motel or hotel sleeping rooms without openable outside windows and facing naturally lighted pool or recreation areas, see ss. Ind 52.02 (1) (b) and 57.13 (2).

(3) **RETURN AIR DUCTS.** Unlined wood joists and stud spaces will be permitted to be used as return air ducts in individual living units provided with individual heating and ventilating systems.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76; am. (3), Register, December, 1976, No. 252, eff. 1-1-77; cr. (2) (a), Register, May, 1980, No. 293, eff. 6-1-80.

**Ind 64.60 Day care facilities. (1) SCOPE.** This classification shall include all public and private day care centers accommodating more than 4 children, including all buildings or parts of buildings used as child day care facilities.

Register, February, 1982, No. 314  
Building and heating, ventilating  
and air conditioning code