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To be inserted between pages 30 & 31.

Comm 64.0403 Mechanical ventilation. (2) OUTDOOR AIR REQUIRED. (a) Substitute the following wording for the exception in IMC section 403.2: Where it can be demonstrated that an engineered ventilation system design will prevent the maximum concentration of contaminants from exceeding the maximum obtainable by providing the rate of outdoor air ventilation determined in accordance with IMC section 403.3, the minimum required rate of outdoor air may be reduced in accordance with such engineered system design.

(b) This is a department rule in addition to the requirements in IMC section 403.2: The outdoor air shall be free from contamination of any kind in proportions detrimental to the health and comfort of the general population exposed to it.

(3) RECIRCULATION PROHIBITED. Substitute the following wording for exception 3 in IMC section 403.2.1: Where indicated in Table 64.0403, recirculation of air from such spaces is prohibited. All air supplied to such spaces shall be exhausted, including any air in excess of that required by Table 64.0403.

(4) RECIRCULATION OF AIR. This is a department informational note to be used under IMC section 403.2.1:

Note: The following are examples where the department will accept air transferred from: corridor to toilet room; corridor to cloak room or janitor closet; dining room to kitchen; locker room to toilet room; gymnasium to locker room; showroom to garage; and corridor to school vocational shops.

(5) TRANSFER AIR. Substitute the following wording for the requirements in IMC section 403.2.2: Except where recirculation from such spaces is prohibited by Table 64.0403, air transferred from occupied spaces is not prohibited from serving as makeup air for required exhaust systems in such spaces as kitchens, baths, toilet rooms, elevators and smoking lounges. The amount of transfer air and exhaust air shall be sufficient to provide the flow rates as specified in IMC sections 403.3 and 403.3.1. The required outdoor air rates specified in Table 64.0403 shall be introduced directly into such spaces or into the occupied spaces from which air is transferred or a combination of both.

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(6) VENTILATION RATE. Substitute the following wording for the requirements and exception in IMC section 403.3:

(a) *Ventilation rate determination.* 1. Except as provided in sub. (2) (a) and s. Comm 64.0300, a mechanical ventilation system shall be designed to have the capacity to supply a minimum outdoor airflow rate of 7.5 cfm per person as determined in accordance with Table Comm 64.0403 based on the occupancy of the space and the occupant load or other parameters stated therein. A mechanical ventilation system shall be designed to have the capacity to exhaust air as specified in Table Comm 64.0403 except as provided in par. (c).

2.a. Except as provided in [subd. 2. b.](#) to [d.](#), the occupant load utilized for design of the ventilation system shall not be less than the number determined from the estimated maximum occupant load rate indicated in Table 64.0403.

b. The estimated maximum occupant load rate may be determined using other means with justification acceptable to the department to show that a different number of occupants is reasonable.

c. Where there is no value indicated for the net square feet per person in Table 64.0403, the actual number of occupants shall be used to determine the required amount of outside air.

d. Ventilation rates for occupancies not represented in Table 64.0403 shall be determined by an approved engineering analysis, or by using the most similar occupancy in the table.

Note: See Table 64.0403 for specific occupancies.

(b) *Adjacent spaces with differing ventilation requirements.*

1. Except as provided in [subd. 2.](#), spaces with different ventilation requirements shall be provided with a complete solid separation, or the most stringent ventilation requirement shall apply to all unseparated areas.

2. The separation as specified in [subd. 1.](#) is not required where an engineered ventilation design system will prevent the concentration of contaminants from exceeding that obtainable by providing a physical separation.

(c) *Exceptions for certain occupancies.* 1. *'Toilet rooms.'* A toilet room that has only one water closet or urinal and no bathtub or shower may be provided with either natural ventilation via a window or louvered opening with at least 2 square feet of area openable directly to the outside or mechanical exhaust ventilation as specified in Table 64.0403.

2. *'Janitor closets.'* A janitor closet that has only one service sink may be provided with either natural ventilation via a window or louvered opening with at least 2 square feet of area openable directly to the outside or mechanical exhaust ventilation as specified in Table 64.0403.

3. *'Locker and shower rooms.'* An adjoining locker room, shower room and toilet room shall be exhausted at the rate specified in Table 64.0403 based on the largest amount of exhaust required for any of the three rooms. A negative pressure relationship shall be maintained in the shower and toilet rooms with respect to the locker room.

4. *'Chemical or septic toilets.'* Chemical or septic toilets and composting privies are prohibited in spaces under negative pressure. Toilet rooms with chemical or septic toilets shall be provided with natural ventilation via a window, louver or skylight with at least 2 square feet of area openable directly to the outside. The opening shall be provided with a screen to limit the passage of insects and vermin.

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5. *'Pool ventilation.'* In a natatorium, the volume of supply air and exhaust air may be reduced to a minimum of 1 cfm per square foot of pool surface provided automatic humidity controls perform so as not to create accelerated building material deterioration from moisture condensation.

(7) SYSTEM OPERATION. Substitute the following wording for the requirements in IMC section 403.3.1: The minimum flow rate of outdoor air that the ventilation system must be capable of supplying during its operation may be based on the rate per person indicated in Table 64.0403 and the actual number of occupants present.

Comm 64.0403 (8) COMMON VENTILATION SYSTEM. (a) This is a department alternative to the requirements in IMC section 403.3.2: Where multiple spaces having different ventilation rate requirements are served by a common ventilation system, the minimum amount of outdoor airflow supplied by the ventilation system shall equal the total outdoor airflow required for each space if each space is provided with minimum air changes in accordance with this subsection.

(b) 1. Except as provided in subd. 4, an air change rate of 6 air changes per hour shall be provided in each space.

2. The air change air rate under this subsection shall be determined upon either the actual height of the space or 10 feet from the floor level of the space which ever is less.

3. The air movement providing the required minimum air change shall be that amount that is transferred through the air handling equipment where the return air is diluted or replaced with outside air and supplied back to the space.

4. a. Air change rate of less than 6 air changes per hour is permitted where mechanical cooling is provided to maintain an interior design temperature of 78°F or lower. The air change rate may not be less than the minimum air changes rate per hour specified in Table 64.0403.

b. Air changes are not required to be provided for spaces required to be mechanically exhausted.

(9) REQUIRED OUTDOOR VENTILATION AIR. Substitute the following table for IMC Table 403.3:

**Table 64.0403
 Ventilation Requirements**

Occupancy Classification	Estimated Maximum Occupant Load (persons per 1,000 sq. ft.)^a	Natural Ventilation Allowed^b	Exhaust^c (cfm/net sq. ft. floor area)	Common Ventilation System Alternative - Minimum AC Rate per hour with A/C
<u>Correctional facilities</u>				
Sleeping rooms ^d	20	yes	NR	2.0
Dining halls	100	no	NR	2.0
Guard stations	40	yes	NR	1.5

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<u>Dry cleaners, laundries</u>				
Coin-operated dry cleaners	8	yes	NR	1.0
Coin-operated laundries	8	yes	NR	1.0
Commercial dry cleaners	NA	no	2.0	NR
Commercial laundries	NA	no	2.0	NR
Storage, pick up	8	yes	NR	1.0
Apartment laundry rooms	NA	yes	0.5	NR
<u>Education</u>				
Auditoriums	150	no	NR	2.0
Classrooms	50	no	NR	2.0
Day care facilities	30	yes only if \leq 20 children	NR	2.0
Laboratories (science)	30	no	NR	2.0
Corridors with lockers ^e	NA	NA	NR	NA
Music rooms	50	no	NR	2.0
Smoking lounges ^{f, g}	NA	no	2.0	NR
Special education	35	no	NR	2.0
Training shops	30	no	NR	2.0
<u>Food and beverage service</u>				
Bars and cocktail lounges	100	no	NR	2.0
Cafeterias, fast food	100	no	NR	2.0
Dining rooms	70	no	NR	2.0
Kitchens (cooking) ^{g, h}	20	yes	NR	1.0
<u>Health care facilities</u>				
Hospitals	See s. Comm 64.0300	See s. Comm 64.0300	See s. Comm 64.0300	See s. Comm 64.0300
Nursing homes				
Ambulatory surgery centers				
<u>Hotels, motels, resorts and dorms</u>				
Assembly rooms	120	no	NR	2.0
Bathrooms ^{f, g}	NA	no	35 cfm/room	NR
Bedrooms	footnote i	yes	NR	1.0
Conference rooms	50	no	NR	2.0
Dormitory sleeping areas	20	yes	NR	1.0
Casinos	NA	no	2.0	NR
Living rooms	footnote i	yes	NR	1.0
Lobbies	30	yes	NR	2.0
<u>Industrial/Factory</u>				
Factories and machine shops	13	yes	NR	NR
Foundries	13	yes	NR	NR
Sawmills	NA	yes	NR	NR
<u>Offices</u>				
Conference rooms	50	no	NR	1.5
Office spaces	7	no	NR	1.5
Reception areas	60	no	NR	1.5
Telecommunication centers and data entry	60	no	NR	1.5

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<u>Places of worship, entertainment and recreation which accommodate less than 100 persons</u>	NA	yes	NR	2.0
<u>Private dwellings, single and multiple</u> Living areas	2 people for first bedroom plus one person for each additional bedroom	yes	NR	1.0
Kitchens ^g	NA	yes	100 cfm intermittent or 20 cfm continuous	NR
Toilet rooms and bathrooms ^g	NA	no	Mechanical exhaust capacity 50 cfm intermittent or 20 cfm continuous ^j	NR
Garages, separated by a solid wall for each dwelling	NA	yes	100 cfm/vehicle	NR
Garages, common for multiple units ^f	NA	no	0.5	NR
<u>Retail stores, sales floors and showroom floors</u>	8	yes	NR	1.0
<u>Seasonal occupancies, camps and lodges</u>				
Dining and recreational areas	15	yes	NR	1.0
Living and sleeping areas	NA	yes	NR	1.0
Club houses	15	yes	NR	1.0
Drive-ins	15	yes	NR	1.0
<u>Specialty shops</u>				
Automotive service and repair garages	NA	no	0.5	NR
Barber shops	25	no	NR	1.0
Beauty salons ^k	NA	no	0.5	NR
Car washes	NA	yes	NR	NR
Clothier, furniture specialty shops	8	yes	NR	1.0
Florist shops	8	yes	NR	1.0
Hardware, drugs, fabrics stores	8	yes	NR	1.0
Supermarkets	8	yes	NR	1.0
<u>Sports and amusement</u>				
Ballrooms and discos	100	no	NR	2.0
Bleacher areas	363 or 18 in./person	no	NR	2.0
Bowling centers (seating areas)	70	no	NR	2.0
Game rooms	70	no	NR	2.0
Ice skating rinks (indoor)	5	no	NR	NR
Natatoriums	NA	NA	2.0 cfm/sq. ft. pool area	NR
Playing floor (gymnasiums)	30	no	NR	2.0
Roller skating rinks (indoor)	30	no	NR	2.0
Spectator areas (non-bleacher)	150	no	NR	2.0

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<u>Storage</u>				
Chlorine storage and handling rooms	NA	no	2.0	NR
Enclosed parking garages ^L	NA	no	0.5	NR
Warehouses	NA	NA	NR	NR
<u>Theaters</u>				
Auditoriums	150	no	NR	2.0
Lobbies	150	no	NR	2.0
Stages, studios	70	no	NR	2.0
Ticket booths	60	no	NR	2.0
<u>Transportation</u>				
Platforms	100	no	NR	2.0
Waiting rooms	100	no	NR	2.0
<u>Utility and public spaces</u>				
Elevator cars ^m	NA	no	NR	NR
Janitor closets	NA	no	2.0 or 75 cfm/sink ^j	NR
Locker and dressing rooms ^f	NA	no	0.5	NR
Shower rooms	NA	no	2.0	NR
Toilet rooms ^{f, g}	NA	no	75 cfm/TF ^j	NR
Smoking lounges ^{f, g}	NA	no	2.0	NR
<u>Workrooms</u>				
Bank vault	5	no	NR	NR
Meat processing	10	yes	NR	NR
Pharmacy	20	yes	NR	1.5
Photo studio	10	yes	NR	1.0
Printing	13	yes	footnote m	NR

NA = not applicable; NR = none required; cfm = cubic feet per minute; TF = toilet fixtures (water closets and urinals); A/C = air conditioning

a Based upon net floor area.

b Natural ventilation is allowed for any occupancy provided an engineered analysis accounts for the number of occupants.

c The ventilation rate is based upon cubic feet per minute per square foot of the floor area being ventilated.

d When unseparated toilet fixtures are included in sleeping areas (such as cells), the room shall be ventilated as required for toilet rooms.

e Outdoor air shall be provided at the rate of 10 cfm of lineal foot of corridor length.

f Mechanical exhaust is required and the recirculation of air from these spaces that would otherwise be allowed by IMC section 403.2.1 is prohibited.

g Outdoor air shall be provided at the rate of 1.0 cfm/net sq. ft. floor area. Transfer air is permitted in accordance with IMC section 403.2.2.

h The sum of the outdoor and transfer air from adjacent spaces shall be sufficient to provide an exhaust rate of not less than 1.5 cfm/sf.

i The minimum mechanical ventilation rate is 15 cfm/room of outside air.

j Natural ventilation may be allowed under this section.

k The classification of a 'beauty' salon depends on the types of services provided. Only beauty salons routinely provide chemical processing of hair to produce texture or color changes, or manicures or other services with a similar need for air-borne contaminant and odor control.

L Enclosed parking garages are parking garages with less than 30% open areas in the total wall area enclosing the garage. Ventilation systems in enclosed parking garages shall comply with IMC section 404. A mechanical

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ventilation system shall not be required in garages having a floor area of 850 square feet or less and used for the storage of 5 or fewer motorized vehicles.
mRefer to IMC chapter 5 for exhaust requirements.

Comm 64.0404 Minimum enclosed garage ventilation. (1) Substitute the following wording for the requirements in IMC section 404.2: Automatic operation of the system shall not reduce the ventilation rate below 0.05 cfm per square foot of the floor area and the system shall be capable of producing a ventilation rate of 0.5 cfm per square foot of floor area.

(2) This is a department alternative to the requirements in IMC sections 404.1 and 404.2: Mechanical ventilation systems for enclosed parking garages are not required to operate continuously where the system conforms to all of the following:

(a) The system is arranged to operate automatically upon detection of carbon monoxide at a level of 35 parts per million (ppm) by automatic detection devices.

(b) If diesel-fueled vehicles are stored, the system is arranged to operate automatically upon detection of nitrogen dioxide at a level of one part per million (ppm) by automatic detection devices.

(c) The system includes automatic controls for providing exhaust ventilation at a rate of 0.5 cfm per square foot for at least 5 hours in each 24-hour period.

(d) The system maintains the garage at negative or neutral pressure relative to other spaces.