

Amendments to the:
2018 2024 International Mechanical Code



Chapter 1 Administration. DELETE chapter 1 with the exception of section 407 111. (Deleted sections are administered by 2018 2024 IBC, Chapter 1)

Section 307.2.1.1 Condensate discharge. REVISE section by ADDING the following at the end of the paragraph:

Condensate disposal shall be allowed to terminate as follows:

1. Into an approved fixture tailpiece, funnel drain, waste air gap fitting, floor sink, slop sink and laundry tray.
2. At or below grade outside the building in an area capable of absorbing the condensate flow without surface drainage.
3. Over roof drains or gutters or downspouts that connect to drainage pipes, provided they terminate at or above grade in an area capable of absorbing the condensate flow without surface drainage.

Section 309.1 Space-heating systems. REVISE section by DELETING the entire section and REPLACE with the following:

Section 309.1 Heating and cooling systems. Interior spaces intended for human occupancy shall be provided with active or passive heating and cooling systems capable of maintaining an indoor temperature between 68F (20C) and 90F (32C) at a point 3 feet (914 mm) above the floor. The installation of portable heaters or coolers shall not be used to achieve compliance with this section.

Exceptions:

1. Space heating and cooling systems are not required for interior spaces where the primary purpose is not associated with human comfort.
2. Group F, H, S, and U occupancies.

Add new section 309.2 to read:

Section 309.2 Space-cooling system. Interior spaces intended for human occupancy shall be capable of maintaining an indoor temperature at or below 80 degrees F (27 C) in the occupied zone 3 feet (914 mm) above the floor and at least 2 feet (610 mm) from exterior walls. Where permanently installed fans capable of generating 120 fpm (0.6 m/s) air speed within the occupied zone, the indoor temperature shall be maintained at or below 85 degrees F (29 C). The installation of one or more portable systems shall not be used to achieve compliance with this section. Evaporative coolers utilized to achieve this condition shall use an outdoor design condition of 66 Fwb (19 Cwb).

Section 401.4 Intake opening location. REVISE section by ADDING an exception to read:

Exception: Replacement of existing evaporative coolers where the building official determines that the replacement does not constitute a high degree of hazard.

Table 403.3.1.1 Minimum Ventilation Rates. REVISE table by DELETING the Outpatient healthcare facilities section of the table and footnotes i and j.

Section 403.3.2 Group R-2, R-3, and R-4 occupancies. REVISE section by DELETING all instances of “and R-4.”

Section 407 Ambulatory Care Facilities and Group 1-2 Occupancies. REVISE section by DELETING the entire section and REPLACE with the following:

Section 407 Healthcare Facilities

407.1 General. Mechanical ventilation for healthcare facilities shall be designed and installed in accordance with this code, ASHRAE 170/ASHE and NFPA 99. Healthcare facilities include I-1, I-2, and R-4 occupancies along with freestanding birth centers, urgent care centers, neighborhood clinics and physicians' offices, Class 1 imaging facilities, outpatient healthcare facilities, outpatient psychiatric facilities, outpatient rehabilitation facilities, and outpatient dental facilities.

Exceptions:

1. Existing healthcare facilities that are being remodeled and the occupancy classification does not change shall meet the requirements of Section 403 or 407.

407.2 Mixed Occupancies. If no functionally equivalent spaces exist in ASHRAE 170/ASHE and NFPA 99, ventilation requirements shall be obtained from Section 403. Where spaces with prescribed rates in both ASHREA 170/ASHE or NFPA 99 and Section 403 of this code exist, the higher of the two airflow rates shall be provided.

Add new section to read.

Section 408 Marijuana Related Occupancies.

Section 408.1 General. General. Marijuana related occupancies includes growing, drying, processing, cooking, storage, and sales of any marijuana or cannabis related products.

Section 408.2 Exhaust and ventilation systems. Exhaust and ventilation systems. All marijuana related occupancies shall meet one of the following paths:

1. Prescriptive path for exhaust and ventilation as described in Section 408.2.1.
2. Engineered exhaust and ventilation system as described in Section 408.2.2.

Section 408.2.1 Prescriptive exhaust and ventilation requirements.

Section 408.2.1.1 Exhaust systems. All marijuana related occupancies must be installed to the following requirements:

1. A minimum negative pressure of 0.01 inch w.c. relative to the building exterior and to adjacent spaces without marijuana related product.
2. A minimum exhaust rate of 0.2 cfm/sf of floor area or the greater as require by Section 403 or the International Fire Code.
3. Exhaust air must be treated with chemical absorption filters, such as activated charcoal prior to discharge. These filters shall have an airflow velocity across the face area of the filter that does not exceed 350 feet per minute.
4. Exhaust outlet locations shall meet the requirements of Section 501.3.1.2 for other product conveying outlets.

Section 408.2.1.2 Ventilation systems. All marijuana related occupancies must be installed to the following requirements:

1. A minimum of 1 cfm/sf of floor area of continuous recirculation air that is provided with a minimum MERV 8 filters and chemical absorbing filters such as activated carbon filters.
2. A design airflow velocity across the face of the chemical absorbing filters shall not exceed 350 feet per minute.

Section 408.2.2 Engineered exhaust and ventilation system. An approved engineered system must provide equivalent ventilation and dilution of product and production chemicals. This requirement is not intended to supersede structural, mechanical, or fire code or requirements set by other state or federal agencies such as hazardous materials ventilation and control.

Section 607.6.1 Through penetrations. REVISE Exception 1. by ADDING “or the floor/ceiling assembly” after the word “wall” and before the word “and”

Section 607.6.2.1.2 Static systems. REVISE section by ADDING new Exceptions 4 and 5.

4. *Static ceiling radiation dampers* shall be permitted to be installed in *Dwelling Units* with smoke alarms installed in accordance with the Building Code and activation of any smoke alarm within the *Dwelling Unit* shall shut down the system.
5. *Static ceiling radiation dampers* shall be permitted to be installed in *Dwelling Units* having a fire alarm system which has smoke detectors installed within the *Dwelling Unit* in accordance with the Building Code requirements for smoke alarms. Activation of any smoke detector within the *Dwelling Unit* shall shut down the system in the *Dwelling Unit*.

Section ~~403.3.1.5~~ 608.1 Balancing. REVISE section by DELETING the second sentence and REPLACING it with the following:

Ventilation systems shall be balanced by individuals holding current certification from the Associated Air Balance Council (AABC), the National Environmental Balancing Bureau (NEBB) or other *approved* agencies.

ADD new section 928.2 to read:

Section 928.2 Water conservation. Evaporative cooling systems shall be provided with a recirculating water system. Any bleed off rate used by the system shall be limited to that recommended by the manufacturer. Once-through evaporative cooling systems using potable water shall not be permitted.

ADD new section 930 ~~932.1~~ to read:

Section ~~930~~ 932.1 Water cooled refrigeration/heat removal systems—water conservation. A water-cooled refrigeration system or heat removal system, (defined as refrigeration or heat removal system using water, all, or in part, for condensing a refrigerant), shall not discharge more than three gallons of water per nominal ton per hour into an approved sanitary disposal system. Wastewater discharge shall be accomplished by the use of an air gap, as described in the *International Plumbing Code*. Each water-cooled system shall be provided with one or more of the following water-saving devices: (a) a cooling tower; or (b) an evaporative condenser; or (c) an *approved* water circulating device.

Section 1001.1 Scope. REVISE section by DELETING the text of exception 7 and REPLACING it with the following:

Any boiler or lined water heater in excess of 200,000 BTU shall be subject to inspection by federal or state inspections. See Arizona Boiler Rules for regulations, Title 20, Chapter 5.

Section 1004.1 Standards. REVISE section by DELETING all text after the second sentence and ADDING the following:

Boilers shall be designed and constructed in accordance with the ASME *Boiler and Pressure Vessel Code*, and Arizona Boiler Rules, Title 20 Chapter 5.

Needs additional research and discussion

SECTION 1109.3.2 Shaft ventilation.

Since we added the amendments in Section 607.6.1, Ken doesn't think there is any amendment needed here. As Ken previously mentioned, the new refrigerants will primarily be A2L and require refrigerant pipe shafts when penetrating more than one floor per Section 1109.2.5 and shaft ventilation per Section 1109.3.2. Adding the amendment in 607.6.1 will allow a 4" sheet metal duct to be routed through the base of the shaft and in the floor/ceiling assembly without having to add dampers and extended to the exterior wall for natural ventilation.

We still don't have any answers for existing buildings where they change the units and are penetrating more than 1 floor. The owners will be forced to route the new refrigerant piping down the exterior wall to the lower floors or install rated shaft enclosures through the floors and then verify that the total refrigerant weight does not exceed the limits in Table 1103.1. This will create excessive costs to the owner for replacement of split systems serving 3 or more floors.