

Rushing

See editorial comments and questions in the uploaded file.

Thanks

Eric Vander Mey

Editorial Public Comments by:

Eric Vander Mey, PE
Rushing
206-285-7114
ericv@rushingco.com

Dated: 11/16/2022

Editorial Public Comments based on the November 17, 2022 Draft Rule Language for WAC 173-443:

Comment 1: Definition of “Air Conditioner”

Recommend adding the following sentence at the end of the paragraph:

[“Air conditioning equipment does not include potable or service hot water heating equipment such as reverse cycle chillers, air-to-water heat pumps, and water-to-water heat pumps.”](#)

“Air conditioning” means the process of treating air to meet the requirements of a conditioned space by controlling its temperature, humidity, cleanliness, or distribution. Air conditioning includes chillers, except for purposes of applying a maximum GWP threshold for new equipment under WAC 173-443-040, and heat pumps. Air conditioning equipment includes, but is not limited to room air conditioning, such as window units, packaged terminal air conditioners, packaged terminal heat pumps, residential dehumidifiers and portable air conditioners; ducted central air conditioners and heat pumps; non-ducted air conditioners and heat pumps (both mini and multi-split); packaged roof top units; water source and ground source heat pumps; and other dehumidifiers. Air conditioning equipment also includes computer room and data center cooling and remote condensing units used for comfort cooling. Air conditioning applies to stationary equipment and does not apply to mobile air conditioning, including those used in motor vehicles, rail and trains, aircraft, watercraft, recreational vehicles, recreational trailers, and campers.

Comment 2: Definition of “Date of Manufacture” (2)

Recommend that this definition is clarified to use the term “split system” which is how air conditioning equipment is described in the Washington State Energy Code that is not “single package” equipment. “

Note: that there are some split systems that require additional refrigerant charges added in the field and some that do not due to shorter refrigerant piping lengths.

Question: Is the intention that this definition applies to only built up split system air conditioning systems that have field added refrigerant charges?

WAC 173-443 Excerpt:

“Date of manufacture” means:

(1) For air conditioning and refrigeration equipment, the date the manufacturer affixed an equipment label indicating the equipment’s date of manufacture;

(2) For refrigeration and air conditioning equipment built up and completed onsite (field erected), the date that the refrigerant circuit was completed and initially filled with refrigerant; or

(3) For foam products imported into the state from outside the United States, the date the foam was originally manufactured, or the date of import if the original manufacture date is not known.

EVM Comment:

Clarify meaning of "built up and completed onsite"

Recommend clarifying as:

built up and completed onsite (field erected or split systems)

WSEC Excerpts:

**TABLE C403.3.2(1)A
MINIMUM EFFICIENCY REQUIREMENTS:
ELECTRICALLY OPERATED UNITARY AIR CONDITIONERS AND CONDENSING UNITS**

EQUIPMENT TYPE	SIZE CATEGORY	HEATING SECTION TYPE	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY	TEST PROCEDURE'
Air conditioners, air cooled	< 65,000 Btu/h ^b	All	Split System	13.0 SEER	AHRI 210/240
			Single Package	14.0 SEER	
Through-the-wall (air cooled)	≤ 30,000 Btu/h ^b	All	Split system	12.0 SEER	
			Single Package	12.0 SEER	
Small-duct high-velocity (air cooled)	≤ 65,000 Btu/h ^b	All	Split System	11.0 SEER	

**TABLE C403.3.2(1)C
MINIMUM EFFICIENCY REQUIREMENTS:
ELECTRICALLY OPERATED VARIABLE REFRIGERANT FLOW AIR-TO-AIR AND APPLIED HEAT PUMPS**

Equipment Type	Size Category	Heating Section Type	Sub-Category or Rating Condition	Minimum Efficiency	Test Procedure'
VRF Air Cooled, (cooling mode)	< 65,000 Btu/h	All	VRF Multi-split System	13.0 SEER	AHRI 1230
	≥ 65,000 Btu/h and < 135,000 Btu/h	Electric Resistance (or None)	VRF Multi-split System	11.0 EER 14.6 IEER	
	≥ 65,000 Btu/h and < 135,000 Btu/h	Electric Resistance (or None)	VRF Multi-split System with Heat Recovery	10.8 EER 14.4 IEER	
	≥ 135,000 Btu/h and < 240,000 Btu/h	Electric Resistance (or None)	VRF Multi-split System	10.6 EER 13.9 IEER	
	≥ 135,000 Btu/h and < 240,000 Btu/h	Electric Resistance (or None)	VRF Multi-split System with Heat Recovery	10.4 EER 13.7 IEER	
	≥ 240,000 Btu/h	Electric Resistance (or None)	VRF Multi-split System	9.5 EER 12.7 IEER	
	≥ 240,000 Btu/h	Electric Resistance (or None)	VRF Multi-split System with Heat Recovery	9.3 EER 12.5 IEER	

Comment 3: Definition of "New air conditioning equipment"

See comments below for new air conditioning equipment definition:

Draft Chapter 173-443 WAC

EVM Comment:
Recommend changing the "facility" to "building"

- (a) New construction in a new facility;
- (b) An existing system with a single condenser and single evaporator that has a new exterior, condensing unit, or remote condensing; or
- (c) An existing facility having more than one condenser and/or more than one evaporator that is modified such that the system has undergone cumulative replacements of 75 percent or more of its indoor evaporator units (by number) and 100 percent of its air source or water source condensing units.

EVM Comment:
Is this an extra comma?
Should it read "new exterior condensing unit or"

EVM Comment:
Is the 75% of indoor evaporators tracked based on the total in the building or based on the total connected to a outdoor condensing unit system?
For example:
VRF system may have (40) indoor evaporators and (2) condensing units.
Building has (4) systems like this so (160) indoor and (8) condensing units.
So is this tracked by building or by system?
If by by system then if (30) indoor units are modified and both condensing units are modified then it is new.

"New air conditioning equipment" means any air conditioning equipment or system first that is installed using new components, used components, or a combination of new and used components that is one of the following:

Comment 4: Corrections in Table 3

See comments below for Table 3:

EVM Comment:
 Change "refrigeration" to "air conditioning"
 (Typical (3) locations)

- (3) Table 3 in this section lists exemptions to the new stationary air conditioning end-use prohibitions in WAC 173-443-040, Table 3.

TABLE 3. New stationary air conditioning equipment exemptions

End-Use	Prohibited Substances	Exemptions
Room/wall/window air conditioning equipment, PTACs, PTHP, portable air conditioning equipment, and residential dehumidifiers (new)	Refrigerants with a GWP of 750 or more	Facilities with new refrigeration equipment with an approved building permit before the effective date of this chapter.
Variable refrigerant flow (VRF) or volume system (new)	Refrigerants with a GWP of 750 or more	Facilities with new refrigeration equipment with an approved building permit before the effective date of this chapter.
Other types of air conditioning equipment (new) used in residential and nonresidential applications	Refrigerants with a GWP of 750 or more	Facilities with new refrigeration equipment with an approved building permit before the effective date of this chapter.

EVM Comment:
 Recommend removing the word "approved" code official generally never "approve" a building permit.
 Per 2021 IBC (see below) a permit is applied for and a permit is issued.
 Recommend change to:
 "with an issued building permit" before the effective date of this chapter.

What is the effective date of this chapter? Are these the dates listed in Table 3?

- (3) Table 3 in this section lists additional prohibitions for new stationary air conditioning equipment and the effective date of prohibition, unless an exemption is provided for in WAC 173-443-050.

TABLE 3. New stationary air conditioning equipment

End-Use	Criteria	Prohibited Substances	Effective Date
Room/wall/window air conditioning equipment, PTAC/PTHPs, portable air conditioning equipment, and residential dehumidifiers (new) (New and existing facilities)	New air conditioning equipment	Refrigerants with a GWP of 750 or more	January 1, 2024
Other types of air conditioning equipment (new) used in residential and nonresidential applications (New and existing facilities)	New air conditioning equipment	Refrigerants with a GWP of 750 or more	January 1, 2026 (date may change)
Variable refrigerant flow (VRF) or volume system (new) (New and existing facilities)	New air conditioning equipment	Refrigerants with a GWP of 750 or more	January 1, 2026 (date may change)

Excerpts from 2021 Building Code on Building Permits:

- Application for permit in 105.3
- Validity of permit or issuance of permit in 105.4

SECTION 105 PERMITS

[A] 105.1 Required.

Any *owner* or owner's authorized agent who intends to construct, enlarge, alter, *repair*, move, demolish or change the occupancy of a building or structure, or to erect, install, enlarge, alter, *repair*, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the *building official* and obtain the required *permit*.

[A] 105.3 Application for permit.

To obtain a *permit*, the applicant shall first file an application therefor in writing on a form furnished by the department of building safety for that purpose. Such application shall:

1. Identify and describe the work to be covered by the *permit* for which application is made.
2. Describe the land on which the proposed work is to be done by legal description, street address or similar description that will readily identify and definitely locate the proposed building or work.
3. Indicate the use and occupancy for which the proposed work is intended.
4. Be accompanied by *construction documents* and other information as required in Section 107.
5. State the valuation of the proposed work.
6. Be signed by the applicant, or the applicant's authorized agent.
7. Give such other data and information as required by the *building official*.

[A] 105.3.1 Action on application.

The *building official* shall examine or cause to be examined applications for *permits* and amendments thereto within a reasonable time after filing. If the application or the *construction documents* do not conform to the requirements of pertinent laws, the *building official* shall reject such application in writing, stating the reasons therefor. If the *building official* is satisfied that the proposed work conforms to the requirements of this code and laws and ordinances applicable thereto, the *building official* shall issue a *permit* therefor as soon as practicable.

[A] 105.3.2 Time limitation of application.

An application for a *permit* for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, unless such application has been pursued in good faith or a *permit* has been issued; except that the *building official* is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated.

[A] 105.4 Validity of permit.

The issuance or granting of a *permit* shall not be construed to be a *permit* for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. *Permits* presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a *permit* based on *construction documents* and other data shall not prevent the *building official* from requiring the correction of errors in the *construction documents* and other data. The *building official* is authorized to prevent occupancy or use of a structure where in violation of this code or of any other ordinances of this jurisdiction.

[A] 105.5 Expiration.

Every *permit* issued shall become invalid unless the work on the site authorized by such *permit* is commenced within 180 days after its issuance, or if the work authorized on the site by such *permit* is suspended or abandoned for a period of 180 days after the time the work is commenced. The *building official* is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.