

## 2018 Seattle Energy Code Amendment

Underline and ~~strikeout~~ text indicates proposed changes to the 2018 Seattle Energy Code as passed by Council.

**C404.2.3 (~~Group R-1 and R-2 occupancies with central service~~) Service water heating (~~systems~~) system type.** In buildings with central service water heating systems serving four or more Group R-1 or R-2 dwelling or sleeping units, and in any other building that has a heated water circulation system or a combined water heating capacity greater than 15 kW (51,195 Btu/h) under a single permit, the primary service water heating equipment shall not use fossil fuel combustion or electric resistance. Service hot water shall be provided by an air-source heat pump water heating (HPWH) system meeting the requirements of this section, or a ground-source heat pump water heating (GSHP) system. Supplemental service water heating equipment is permitted to use electric resistance in compliance with Section C404.2.3.4.

**SDCI Informative Note:** A “central service water heating system” in this context is a system that serves more than one dwelling unit, sleeping unit, tenant space, or building area. It can consist of a single water heating system or multiple systems each serving individual floors, risers or building areas. The term does not apply to an individual water heater serving a single use, such as a restaurant in a food court, a pair of toilet rooms, or an apartment building party room.

### Exceptions.

1. Permits applied for prior to January 1, 2022.
2. A service water heating system in a tenant space under a separate permit with a total heating capacity in that tenant space that is no greater than 15 kW (51,195 Btu/h) is permitted to be electric resistance.
3. Point of use instantaneous electric water heaters serving fixtures no more than 8 feet of developed pipe length from the water heater, are permitted and do not contribute to the building combined water heating capacity calculation.
4. Solar thermal, wastewater heat recovery, other *approved* waste heat recovery, ground source heat pump, water-source heat pump system utilizing waste heat, and combinations thereof, are permitted to offset all or any portion of the required HPWH capacity where such systems comply with this code and the Seattle Plumbing Code.
5. Systems meeting the requirements of the Northwest Energy Efficiency Alliance (NEEA) Advanced Water Heater Specifications for central service water heating systems.
6. Unitary heat pump water heaters located in conditioned space are permitted, where they are sized to meet all calculated service water heating demand using the heat pump compressor, and not supplementary heat.
7. For other than Group R-1 and R-2 Occupancies, steam or hot water district energy systems that utilize fossil fuels as their primary source of heating energy, that serve multiple buildings, and that were already in existence prior to the effective date of this code, including more energy-efficient upgrades to such existing systems, are permitted to serve as the primary heating energy source.
8. Replacement equipment for existing central service water heating systems serving other than Group R-1 and R-2 occupancies is permitted to utilize fossil fuel or electric resistance heat as the primary heating energy source.

9. Commercial dishwashers, commercial food service equipment, and other approved process equipment are permitted to utilize electric booster heaters for supply water temperatures 120°F or higher.

**C404.2.3.1 Primary heat pump system sizing.** The system shall include a primary service minimum output at 40°F dry bulb outdoor air temperature for air-source heat pumps, or 40°F ground temperature for ground-source heat pumps, that provides sufficient hot water for ((~~R-1 and/or R-2 occupancy~~)) uses as calculated using the equipment manufacturer’s selection criteria or another *approved* methodology. Air source heat pumps shall be sized to deliver no less than 50 percent of the calculated demand for hot water production during the peak demand period when entering air temperature is 24°F.

**Exception.** 50 percent sizing at 24°F is not required for heat pumps located in below-grade enclosed parking structures or other ventilated and unconditioned spaces in which the ambient temperature is not anticipated to fall below 40°F at any time.

**TABLE C406.1 EFFICIENCY PACKAGE**

**CREDITS**

Code Section	Commercial Building Occupancy					
	Group R-1	Group R-2	Group B	Group E	Group M	All Other
	Additional Efficiency Credits					
(remainder of table unchanged)						
8. High-efficiency service water heating in accordance with Sections C406.8.1 and C406.8.2	4.0 NA after 1/1/2022	5.0 NA after 1/1/2022	NA	NA	NA	8.0 NA after 1/1/2022
9. High performance service water heating in (( <del>multi-family buildings in</del> )) accordance with Section C406.9	7.0 prior to 1/1/2022 5.0 after 1/1/2022	8.0 prior to 1/1/2022 5.0 after 1/1/2022	NA prior to 1/1/2022 3.0 after 1/1/2022 <sup>e</sup> Lab only	NA	NA	NA 3.0 after 1/1/2022 <sup>f</sup>

(footnotes a through d unchanged)

- e. In Group B occupancies, the high-performance service water heating credit applies only to research and production laboratory spaces, and adjacent circulation serving those laboratory spaces, but not to associated office or other space uses.
- f. Buildings, building additions, building areas, occupancy types, or tenant spaces with a service hot water load of 10 percent or more of total building energy loads, as demonstrated through an energy analysis complying with Section C407, or a minimum service water energy use of 15,000 Btu per square foot per year, as demonstrated through an alternate service hot water load calculation method approved by the code official, are permitted to apply this credit.

**C406.8 Reduced energy use in service water heating.** Buildings with service hot water heating equipment that serves the whole building, building *addition* or tenant space shall comply with Sections C406.8.1 and C406.8.2. No service water heating systems incorporating fossil fuel-fired equipment, or heat from district energy systems that are primarily heated by fossil fuel combustion, are permitted to utilize this credit. After April 1, 2022, buildings subject to the requirements of Section C404.2.3 are not permitted to utilize this credit.

**C406.8.1 Building type.** Not less than 90 percent of the *conditioned floor area* of the whole building, building area, occupancy type, building *addition* or tenant space shall be of the following types:

1. Group R-1: Boarding houses, hotels or motels. ~~((Not applicable after 1/1/2022))~~
2. Group I-2: Hospitals, psychiatric hospitals and nursing homes.
3. Group A-2: Restaurants and banquet halls or buildings containing food preparation areas.
4. Group F: Laundries.
5. Group R-2. ~~((Not applicable after 1/1/2022))~~
6. Group A-3: Health clubs and spas.
7. Buildings with a service hot water load of 10 percent or more of total building energy loads, as shown with an energy analysis as described in Section C407 or as shown through alternate service hot water load calculations showing a minimum service water energy use of 15 k/Btu per square foot per year, as *approved* by the building official.

**C404.2.1 High input-rated service water heating systems for other than Group R-1 and R-2 occupancies.** In new buildings where the combined input rating of the water-heating equipment serving other than Group R-1 and R-2 occupancies installed in a building is equal to or greater than 1,000,000 Btu/h (293 kW), the combined input-capacity-weighted-average efficiency of water-heating equipment shall be no less than the following for each water heating fuel source:

1. Electric: A rated COP of not less than 2.0. For air-source heat pump equipment, the COP rating will be reported at the design leaving heat pump water temperature with an entering air temperature of 60°F (15.6°C) or less.
2. Fossil Fuel: A rated  $E_t$  of not less than 90 percent as determined by the applicable test procedures in Table C404.2.

**SDCI Informative Note. Section C404.2.1 will remain in force only until December 31, 2021.**

**Exceptions:**

1. Permits applied for on or after ~~((January))~~ April 1, 2022.

**C503.4.6 New and replacement HVAC heating system equipment.** For new HVAC heating system equipment, substantial alterations as defined in Section C503.8.1, or where a building's central HVAC heating system equipment is augmented or replaced, the building shall comply with Section C403.1.4.

**Exception.** Where only one heating appliance is failing and is replaced by another having the same or lesser heating capacity and the same or higher efficiency, no other alterations are made to the central HVAC system, this provision does not apply.

**SDCI Informative Note:** The term "central HVAC heating system" for the purposes of this section means a heating system that provides heating to multiple spaces or multiple dwelling or sleeping units (as opposed to a distributed heating system such as a baseboard heater or PTHP that provides heating to only a single space). A central heating system may include multiple pieces of heating equipment. The exception permits like-for-like replacement of a single boiler, furnace or heat pump, where no other HVAC work is planned, so that a failed heating appliance can be expediently replaced.

**C503.5 Service hot water systems.** For new service hot water systems, ~~((that are part of the alteration))~~ substantial alterations as defined in Section C503.8.1, or where a building's central hot water heating system equipment is augmented or replaced, the building shall comply with Section C404.

**Exception.** Where only one service hot water appliance is failing and is replaced by another having the same or lesser heating capacity and the same or higher efficiency, no other alterations are made to the central service hot water system, and this exception has not been used within the same building in the previous 24-month period, this provision does not apply.