

Proposed Change in Scope – Heat Pump Water Heating

2018 Seattle Energy Code Public Review Draft March 4, 2021

C404.2.3 ((Group R-1 and R-2 occupancies)) Buildings with central service water heating systems. In buildings with central service water heating systems ((serving four or more Group R-1 or R-2 dwelling or sleeping units)), the primary 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. Supplemental service water heating equipment is permitted to use electric resistance in compliance with Section C404.2.3.4.

Exceptions.

1. Permits applied for prior to January 1, 2022.
2. Buildings with combined water heating capacity of less than 21 kW and no greater than 120 gallons of total hot water storage capacity are permitted to utilize electric resistance water heating equipment.
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 for Exception 2.
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.

**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 |

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 January 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 1, 2022.**

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