

Individual Dwelling Units and Heat Pump Water Heaters

2016 Energy Code (Title 24 Part 6) Assistance Sheet

For prescriptive requirements for other water heating systems and configurations refer to the 2016 Building Energy Efficiency Standards section 150.2(b) for alterations, 150.2(a) for additions, or 150.1(c) for new construction.

When does the 2016 Code allow HPWHs?

	Performance Path	Prescriptive Path
New Construction	Allowed	Not allowed
Additions installing a 2 nd water heater	Allowed	Allowed when no gas service is available
Alterations	Allowed	Allowed as described below


Can a HPWH replace an existing water heater? YES! If:

- The building has natural gas service and the installed HPWH is rated as NEEA Tier 3 or meets the UEF identified to the right. § 150.2(b)1Giid*;
- The building does not have natural gas service and the HPWH meets federal appliance standards. § 150.2(b)1Giib; or
- The permit applicant can demonstrate the project complies with Energy Code using the performance method. § 150.2(b)2

UEFs for Heat Pump Water Heaters	
Climate Zone	Minimum UEF
1, 2, 3	2.82
4, 12	2.87

What to look for on the required CF1R-ALT-01-E Compliance Form[†] and Permit Application

STATE OF CALIFORNIA
RESIDENTIAL ALTERATIONS
CEC-CF1R-ALT-01-E (Revised 09/16)


 CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE										CF1R-ALT-01-E				
Prescriptive Residential Alterations										(Page 5 of 6)				
Project Name:										Date Prepared:				

J. Water Heating Systems (Section 150.2(b)1G)														
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Water Heating System Identification or Name	Water Heating System Type	Water Heater Type	# of Water Heaters in System	Water Heater Storage Volume (gal)	Fuel Type	Rated Input Type	Rated Input Value	Heating Efficiency Type	Heating Efficiency Value	Standby Loss (%)	Exterior Insul. R-Value	Back-Up Solar Savings Fraction	Central DHW System Distribution Type	Dwelling Unit DHW System Distribution Type
					E			EF or UEF						

- Fuel Type: Electric (E)
- Heating Efficiency Type: Energy Factor (EF) or Uniform Energy Factor (UEF)
- Heating Efficiency Value:
 - o If the building has natural gas service, the UEF must meet or exceed the values in the table above
 - o If the building does not have natural gas service, the UEF and EF values will differ depending on the product

What to look for when inspecting an installed heat pump water heater

- The installed HPWH matches what's on the approved CF1R form
- If the building has natural gas service, the installed HPWH is rated as NEEA Tier 3 or meets the UEF values in the table above
- If the building does not have natural gas service, it's safe to assume any installed HPWH meets federal appliance standards
- If the water heater being replaced was a natural gas water heater, the natural gas line has been capped off
- A dedicated 240 V/30 A electrical line (for most HPWHs). If an existing dedicated 240 V/30 A line is not already located near the HPWH installation location, electrical work for a new line and an upgrade to the electric panel to accommodate the new electric load may be required.
- Insulation for new and existing hot and cold-water pipes from the storage tank (when accessible)
- Condensate waste removal, and if necessary, a drop/overflow basin and drainage piping. Note that condensate contains no combustion products or acids and so may be drained to sanitary sewer or to outside via a hose.
- Seismic bracing for the storage tank
- A visible AC disconnect

*NEEA: Northwestern Energy Efficiency Alliance; UEF: Uniform Energy Factor

[†] User Instructions related to HPWHs appear on page 9 of 11 and 10 of 11

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NEEA Rated HPWHs

The Northwest Energy Efficiency Alliance maintains a list of products that meets its Advanced Water Heater Specifications. Some commonly available products are listed below. If the water heater you are looking at is not listed, please refer to the full list which is available online here: <https://neea.org/img/documents/qualified-products-list.pdf>.

Common NEEA Tier 3 and Tier 1 products in the Bay Area nine county region

NEEA Rating	Product Brand	Model	Volume (gallons)	UEF	EF
Tier 3	A. O. Smith	HPTU 80 120	80	2.9	--
Tier 3	Bradford White	RE2H50R10B-1NCWT	50	2.8	--
Tier 3	Bradford White	RE2H80R10B-1NCWT	80	3.1	--
Tier 3	GE	GEH50DFEJSR	50	--	2.8
Tier 3	Rheem	XE50T10HD50U1	50	3.2	--
Tier 3	Rheem	XE65T10HD50U1	65	3.4	--
Tier 3	Rheem	XE80T10HD50U1	80	3.4	--
Tier 3	Rheem	PROPH50 T2 RH350 D	50	3.2	--
Tier 3	Rheem	PROPH80 T2 RH350 D	80	3.4	--
Tier 3	Rheem	XE50T10HD50U0	50	3.2	--
Tier 3	Rheem	XE65T10HD50U0	65	3.4	--
Tier 1	Stiebel Eltron	Accelera 220 E	58.1	--	2.58
Tier 1	Stiebel Eltron	Accelera 300/WHP 300	80	--	1.9

Table last updated 9/13/18. Please email codes@bayrencodes.org if you know of other heaters that are currently available in the Bay Area and should be listed here.