



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

Washington State Energy Code Development Standard Energy Code Proposal Form

May 2018

Log No. _____

Code being amended: Commercial Provisions Residential Provisions

Code Section # R403.5.4 and Table 406.2 section 5(d)

Brief Description:

This is a proposal to amend the language in the Code to recognize drain water heat recovery devices that are certified and rated to an IAPMO standard for drain water heat recovery. Without this amendment, the current draft language only recognizes those devices certified to the CSA standard.

This amendment will make it possible to earn Washington State Energy credits in new buildings where it is necessary to install sloped (e.g. horizontal) drain water heat recovery devices, which can be certified to the IAPMO standard (but not to the current CSA standard).

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

R403.5.4 Drain water heat recovery units. Drain water heat recovery units shall comply with CSA 55.2 or IAPMO PS 92. Drain water heat recovery units shall be in accordance with CSA 55.1 or IAPMO IGC 346-2017. ~~Potable water side pressure loss of drain water heat recovery units shall be less than 3 psi (20.7 kPa) for individual units connected to one or two showers. Potable water side pressure loss of drain water heat recovery units shall be less than 2 psi (13.8 kPa) for individual units connected to three or more showers.~~

Table 406.2

Energy Credits, section 5 (d)

EFFICIENT WATER HEATING 5d:

A drain water heat recovery unit(s) shall be installed, which captures waste water heat from all the showers, and has a minimum efficiency of 40% if installed for equal flow or a minimum efficiency of 52% if installed for unequal flow. Such units shall be rated in accordance CSA B55.1 or IAPMO IGC 346-2017 and be so labeled.

To qualify to claim this credit, the building permit drawings shall include a plumbing diagram that specified the drain water heat recovery units and the plumbing layout needed to install it and labels or other documentation shall be provided that demonstrates that the unit complies with the standard.

Purpose of code change:

This existing draft code recognizes only those drain water heat recovery units that are compliant with CSA. Another reputable and recognized standards organization, IAPMO, also has established standards for drain water heat recovery. The change proposed here would give equal recognition to drain water heat recovery units as certified to the standards of either CSA or IAPMO.

The technical standards applied by CSA and IAPMO are almost exactly the same with respect to drain water heat recovery devices that are designed for vertical installation. The protocol for rating the effectiveness of the device is also the same.

The key difference between the CSA and IAPMO standards is that CSA only certifies units that are designed for vertical installation, while IAPMO will also certify units that are designed for sloped (e.g. horizontal) installation.

By recognizing those devices compliant to the IAPMO standard, it will become possible to install devices in locations where the vertical drop is not sufficient to install a vertical device (e.g. showers in basements and many ground floors).

Incidentally, California has recently adopted similar language in its 2019 Title 24 provisions for drain water heat recovery. You can review the California Title 24 language, including references to the IAPMO PS 92 and IAPMO IGC 346-2017 standards, in the 2019 Residential Appendix, sections RA3.6.9 and RA4.4.21, which can be accessed from the California Energy Commission website here (as of December 18, 2018):

<https://www.energy.ca.gov/2018publications/CEC-400-2018-021/CEC-400-2018-021-CMF.pdf>

We also propose that the requirements related to rated pressure loss be removed from R403.5.4. Given that these devices are installed by licensed plumbing professionals who are knowledgeable about pressure loss in plumbing systems, and the impact of pressure loss is highly dependent on the water pressure of the supply system, it seems reasonable to leave this determination to the architect, plumbing designer and the installing contractor.

Your amendment must meet one of the following criteria. Select at least one:

- | | |
|--|---|
| <input type="checkbox"/> Addresses a critical life/safety need. | <input type="checkbox"/> Consistency with state or federal regulations. |
| <input checked="" type="checkbox"/> The amendment clarifies the intent or application of the code. | <input type="checkbox"/> Addresses a unique character of the state. |
| <input checked="" type="checkbox"/> Addresses a specific state policy or statute.
(Note that energy conservation is a state policy) | <input checked="" type="checkbox"/> Corrects errors and omissions. |

Check the building types that would be impacted by your code change:

- Single family/duplex/townhome Multi-family 1 – 3 stories Multi-family 4 + stories

Commercial / Retail

Institutional

Industrial

Your name Robert Hitchner

Email address bhitchner@ecodrain.com

Your organization Ecodrain Ltd.

Phone number 805-444-3275

Other contact name David Velan

Economic Impact Data Sheet

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants and businesses.

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

\$[Click here to enter text.](#)/square foot (For residential projects, also provide \$[Click here to enter text.](#)/ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

Provide your best estimate of the annual energy savings (or additional energy use) for your code change proposal?

[Click here to enter text.](#)KWH/ square foot (or) [Click here to enter text.](#)KBTU/ square foot

(For residential projects, also provide [Click here to enter text.](#)KWH/KBTU / dwelling unit)

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application: