

From: Graham S. Wright <graham@passivehouse.us>
Sent: Friday, September 27, 2019 8:01 PM
To: DES SBCC <sbcc@des.wa.gov>
Subject: Additional comment 2 of 2 on Proposed 2018 Residential Energy Code

Dear Councillors,

This pertains to the decorative fireplace discussion.

On the viewpoint expressed in the meeting today by the industry reps, that a decorative fireplace is a device that consumes energy and makes something interesting/nice to *look at*, I would suggest that it is similar to a television or pc gaming rig. Televisions are qualified by Energy Star based mainly on their *on-mode power consumption* with sensitivity to viewable area:

On Mode Power Requirements:

$$P_{ON_MAX} = 78.5 \times \tanh(0.0005 \times (A - 140) + 0.038) + 14$$

Where:

- P_{ON_MAX} is the maximum allowable On Mode Power consumption in watts;
- A is the viewable screen area of the product in square inches; and
- \tanh is the hyperbolic tangent function.

(A 50x50 inch television would only be allowed 78 watts if I am doing the math right.)

To apply that framework to decorative gas fireplaces I would suggest a concept of parity with electronic devices on a source energy basis.

According to pcgamer.com a high-end gaming rig might take 862 watts to run, or 2941 Btu/hr at the site. Multiplying by the source-to-site ratio of 2.8 for grid electricity in the U.S. according to [Energy Star Portfolio Manager](#), this would be 8235 Btu/h source, for the pc game. Dividing by the 1.05 source-to-site factor for gas, the power parity level for a decorative gas fireplace would be 7843 Btu/h generated in the device.

So I would suggest a rule that (in addition to the ANSI test that was mentioned) decorative gas fireplaces must have an on-mode fuel consumption rate < X Btu/h, where X is about 10000 Btu/h, or perhaps Y Btu/h per linear foot, where Y is about 5000 Btu/h/ft. If for clarity that needs to be specified in cubic feet per hour of gas *supplied to* the device, I wouldn't quibble about high heating value versus low heating value.

It's just a thought.

Again best wishes on your deliberations.

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