



**City of
Portland, Oregon
Bureau of Development Services**

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To: Tad Everhart

From: Alternative Technology Advisory Committee:

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RE: Application #09-003 (Everhart) – Final Recommendation

Date: September 16, 2009

Summary of Proposal: Plumbing waste piping systems are required to be vented to equalize air pressure within the piping. The applicant proposes to install Air Admittance Valves (AAVs) inside the building envelope, in lieu of conventional through-roof plumbing waste vent stacks in a single-family dwelling being designed using high-efficiency Passive House standards. AAVs are one-way valves that allow air to enter the waste piping to relieve negative pressure, installed in the same locations as required for conventional relief vents. Potential positive back-pressure from the sewer main is proposed to be relieved by a two-way vent with a replaceable carbon filter cartridge installed near grade level where the main waste line exits the house. The AAVs and two-way vents are manufactured by Studor, Inc.

Applicable Building Code Section(s): 2008 Oregon Plumbing Specialty Code, Section 906.0 Vent Termination.

Committee Findings:

1. The 2003 and 2006 International Plumbing Code and International Residential Code allow AAVs in commercial and residential applications.
2. Use of AAVs in lieu of through-roof vent stacks will increase energy conservation by reducing heat loss from the building and reducing construction materials.
3. Penetrations of the building envelope are a major source of condensation and rot problems over time in a building, so reducing their number is advantageous to maximizing building lifetime.
4. Conventional through-roof vent stacks must terminate above the roof to prevent sewer gasses from entering the house. AAVs do not allow sewer gasses to enter the house. Positive back-pressure is relieved outside the house through a two-way valve with a carbon filter.
5. Studor AAVs have been listed by American Society of Sanitary Engineering since 1993 (ASSE 1051)

Final Committee Recommendation:

Based on these findings the Alternative Technology Advisory Committee recommends approval of this technology. The Bureau of Development Services' Administrative Appeal Board is encouraged to approve subsequent building code appeals based on the information provided in this application.

Please note: The Bureau of Development Services (BDS) and its Administrative Appeal Board is not bound by the recommendations of the Committee. A favorable recommendation of a technology by the Committee does not guarantee approval of a building code appeal.

Further instructions for the applicant:

You may submit your building code appeal to use this technology in a site-specific project at any time by following the [instructions](#) found on the BDS website. A building code appeal must be approved by BDS to be able to use this technology in a project. Please submit a copy of this committee recommendation with your appeal application. Please contact the Appeal Board Secretary at (503) 823-7335 if you have any additional questions about the appeal process.