Code Amendment Proposal Application

Department of Consumer & Business Services
Building Codes Division
1535 Edgewater NW, Salem, Oregon
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Oregon.gov/bcd

Read the entire code amendment proposal application before completing this form. Please complete all parts before submitting your proposal and refer to the provided checklist.

APPLICANT INFORMATION		
Name: Mike Moore		Date: August 25, 2022
Representing (if applicable): Stator LLC, representing Broan-NuTone		Work phone: 303.408.7015
Mailing address: 926 W State St.		Cell phone:
City: Hartford	State: WI	Zip: 53027
Email address: mmoore@statorllc.com		

PROPOSAL INFORMATION
Specialty code: Oregon Residential Specialty Code
Code section(s): N1105.6
Briefly explain the subject of your proposal: Establish minimum fan efficacy for central fan integrated (CFI) ventilation systems, in alignment with the 2021 IECC-R and the draft 2024 IECC-C.

INSTRUCTIONS AND CHECKLIST

Fill in all the information above and submit this page, signed and dated, with the required supplementary information for Parts I, II, III, and IV described on page 2 of this application. This application may be submitted by mail to the mailing address above, or by email to BCD.PTSPtech@oregon.gov.

Summary checklist for the applicant:

- ■ Part I — Code amendment language is attached in the proper format.
- ■ Part II — Amendment proposal requirements for amending the code have been reviewed.
- ■ Part III — Amendment proposal criteria questions have been answered and are attached.
- ■ Part IV — If applicable, additional ORSC energy efficiency amendment proposal information is attached.

Note: One application is required for each code section you are proposing to amend. If this proposal requires changes in other sections of the code for alignment, include those changes as part of this application.

APPLICANT SIGNATURE

Signature: Mike Moore Date: August 25, 2022 (*with corrections on August 31, 2022)

Part I – Code Amendment Language
Proposal: Modify the Base Code with BCD Proposed Provisions as follows:

N1105.6 Ventilation fan efficiency. Bathroom exhaust fans and outdoor ventilation air supply fans shall be Energy Star certified. A fan that is the air mover for a heating or cooling system that serves an individual dwelling unit shall not be used to provide outdoor air except where its fan efficacy is not less than 1.2 cfm of outdoor airflow per watt when there is no demand for heating or cooling.

Rationale: This modification would align supply ventilation system fan efficacy for heating and cooling system air handlers with the 2021 IECC-R (Table R403.6.2) and draft 2024 IECC-C (i.e., through approval of CEPI-120-21 as modified by the IECC-C Consensus Committee on June 8, 2022, by a vote of 33-1), while cost-effectively conserving significant energy. When space conditioning air handlers are used as the primary supply fan to provide outdoor air to dwelling units, the energy penalty can be significant. Such systems are commonly referred to as "central fan integrated" or CFI systems. The typical energy penalty associated with using a CFI system instead of a dedicated outdoor air supply fan is estimated at 226 – 634 kWh annually per dwelling unit — a large penalty that is comparable to adding ~0.5-1.5 refrigerators to a dwelling unit. This proposal would ensure that, where specified, a CFI system's outdoor air fan efficacy requirements would comply with at least the minimum fan efficacy requirement of the options provided in Table R403.6.2 of the 2021 IECC. The simple payback associated with this proposal is estimated at 2.2 – 6.3 years (2400 ft^2 and 1000 ft^2 units, respectively). Please see the Excel workbook provided with this proposal for a complete list of assumptions and calculations (N1105.6 – CFI Simple Payback Calcs – 20220825.xlsx).

Part II – Code Amendment Proposal Requirements
This proposal is enforceable by the ORSC.

Part III and IV – ORSC Energy Efficiency Code Amendment Proposal Criteria

Implementation: The proposed provision would be enforced by confirming that,

1. where an in-line supply fan is specified, the fan is ENERGY STAR certified, or
2. where a CFI system is specified, manufacturer data supports a fan efficacy of 1.2 cfm of outdoor airflow per watt.

No additional inspections or permits are proposed. There is also no need for additional equipment, training, tests, or special certifications.

Fiscal Impact: In some cases, the code change proposal may increase the cost of construction. For dwelling units that are already using an in-line fan to provide the supply ventilation required by the ORSC, this proposal will not increase the cost of construction. For dwelling units that are currently using a CFI system that meets or exceeds the proposed minimum fan efficacy of 1.2 cfm/W, this proposal will not increase the cost of construction. For dwelling units that migrate from a CFI system to an in-line fan to provide the supply ventilation required by the ORSC, the cost is expected to increase by ~$150. This incremental first cost can be recouped quickly (i.e., simple payback of ~2.2-6.3 years) based on energy savings of ~226-634 kWh/year by using a dedicated in-line supply fan instead of a CFI system to deliver outdoor air. Please see the Excel workbook provided with this proposal for a complete list of assumptions and calculations (N1105.6 – CFI Simple Payback Calcs – 20220825.xlsx).

Impacted stakeholders and other specialty codes: This proposal is based on text in the 2021 IECC-R and on text approved by the IECC-C Consensus Committee on June 8, 2022, by a vote of 33-1 (i.e., CEPI-120-21 as modified). The proposal does not impact other specialty codes or statewide programs; however, mirroring this proposal in future versions of Oregon's IECC-C is recommended.