


BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing
AIBC, EGBC, BOABC

File No: 24-0035

INTERPRETATION

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Interpretation Date:	February 18, 2025 (REVISED)
Building Code Edition:	BC Building Code 2024
Subject:	Exhaust Air Inlet as a Return Air Inlet in Dwelling Unit
Keywords:	Heat Recovery Ventilator (HRV), Forced-air Heating System, Exhaust Air, Return Air
Building Code Reference(s):	9.32.3.4.(3); Table 9.32.3.5.; Note A-9.32.3; Figure 9.32.3.4.(3); 9.33.4.1.; 9.33.6.12.(2),(3); Note A-9.33.6.13,
Question:	<p>In a single-family dwelling unit that is equipped with a heat recovery ventilator (HRV) and a forced air furnace, can an inlet to an exhaust air duct satisfy the requirement for a return air inlet on the upper most floor level?</p>
Interpretation:	<p>No.</p> <p>Exhaust duct is defined as a duct through which air is conveyed from a room or space to the outdoors. Return duct means a duct for conveying air from a space being heated, ventilated or air-conditioned back to the heating, ventilating or air-conditioning appliance. They serve different purposes.</p> <p>Subsection 9.32.3. applies to heating-season mechanical ventilation. Sentence 9.32.3.4.(3) regulates ventilation system with a combination of a ducted forced-air heating system and an HRV. It requires that “the HRV shall draw exhaust air, through dedicated ducting from one or more indoor inlets, at least one of which is located at least 2 m above the floor of the uppermost floor level and at the capacity rating of the HRV, which shall be no less than the air-flow rate specified in Table 9.32.3.5.” The exhaust air is ducted directly to the HRV and then to the exterior without mixing with the forced-air heating system.</p> <p></p> <hr/> <p>Patrick Shek, P.Eng., CP, FEC, Committee Chair</p>

The views expressed are the consensus of the joint committee with members representing AIBC, EGBC and BOABC, which form the BC Building Code Interpretation Committee. The Building and Safety Standards Branch, Province of BC and the City of Vancouver participate in the committee's proceedings with respect to interpretations of the BC Building Code. The purpose of the committee is to encourage uniform province wide interpretation of the BC Building Code. These views should not be considered as the official interpretation of legislated requirements based on the BC Building Code, as final responsibility for an interpretation rests with the local *Authority Having Jurisdiction*. The views of the joint committee should not be construed as legal advice.

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Subsection 9.33.6. applies to air duct systems serving heating and cooling systems. Sentence 9.33.6.12.(2) requires at least one return-air inlet located on each floor level in a dwelling unit. Sentence 9.33.6.12.(3) also requires that provision shall be made for the return of air from all rooms by leaving gaps beneath doors, using louvred doors or installing return duct inlets. Return-air systems shall also comply with Article 9.33.6.13. The return-air is ducted back to the furnace, not to the HRV.

Figure 9.32.3.4.(3) shows a forced-air heating system with an HRV. It indicates an exhaust inlet and a furnace air return at the upper level and a return air inlet on the lower floor.

The exhaust duct and return duct serve different functions and their requirements are regulated by different sections of the code. When using the prescriptive method for the design and installation they are not interchangeable.

As indicated in Note A-9.33.6.13. excessive outdoor air should not be introduced to the return air duct system as it could result in damage to the air handler. Note A-9.32.3. also provides some guidance on acceptable ventilation strategies.

Article 9.33.4.1. indicated that aspects of HVAC systems not specifically addressed in this Subsection, including ducting, and mechanical heating and refrigeration equipment, shall be designed, constructed and installed in accordance with good practice.



Patrick Shek, P.Eng., CP, FEC, Committee Chair

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