

# BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing  
**AIBC, EGBC, BOABC**

**File No: 12-0114**

**INTERPRETATION**

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Interpretation Date:	May 15, 2018
Building Code Edition:	BC Building Code 2012
Subject:	Insulation of Exhaust Ducts
Keywords:	Exhaust Duct, Conditioned Space, Insulation
Building Code Reference(s):	9.32.3.8.(4), 9.36.2.4.(2), 9.36.2.5.(6)

**Question:**

Where exhaust ducts such as from bathrooms or dryers are located in floor assemblies, and the floor assembly is adjacent to a space that is not conditioned, do the exhaust ducts require insulation?

**Interpretation:**

Yes, except where there is other insulation meeting the requirement, between the duct and the unconditioned space.

Sentence 9.32.3.8.(4) requires an exhaust duct that passes through or is located adjacent to a space that is not conditioned space to conform to Article 9.32.3.2, which states design and installation requirements that are not relevant to this question, but also that the duct must be insulated to not less than RSI 0.75 (R 4.25).

Conditioned space is defined as “any space within a building the temperature of which is controlled to limit variation in response to the exterior ambient temperature by the provision, either directly or indirectly, of heating or cooling over substantial portions of the year.” Sentence 9.32.3.8.(4) is mainly intended to reduce the possibility of condensation inside the duct, where an exhaust duct containing warm air from a conditioned space passes through a cooler space.

A floor or ceiling assembly within a heated building is typically insulated at the exterior walls to limit heat loss, and is not insulated from adjacent heated floor areas, so the floor assembly is conditioned space. Where the duct is in a floor or ceiling assembly and the insulation on the cold side of the duct is at least RSI 0.75, the duct does not require additional insulation. If the duct passes through a ceiling space that is not conditioned such as over an unheated garage where the duct is below the insulation in the ceiling space, or an unheated attic, the duct requires insulation.

  
R. J. Light, Committee Chair

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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Sentence 9.36.2.5.(6) contains additional insulation requirements for ducts that are within and parallel to a wall assembly that is required to be insulated. However, the Appendix note A-9.36.2.5.(6) states that those requirements are not applicable to components that completely penetrate the building envelope, such as intake or exhaust ducts. In addition, Sentence 9.36.2.4.(2) states that duct penetrations of a building envelope need not be taken into account in the calculation of the effective thermal resistance of that assembly. Therefore, the insulation of an exhaust duct that penetrates the exterior wall is governed by Sentence 9.32.3.8.(4). Where the duct penetrates an insulated exterior wall so that only the end of the duct is exposed to the unconditioned space (the exterior), the duct does not require additional insulation. The duct should be installed with a slope to the exterior to allow any condensation to drain.



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