

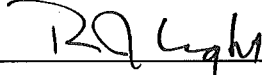
BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing
AIBC, APEGBC, BOABC, POABC

File No: 12-0049

INTERPRETATION

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Interpretation Date:	April 21, 2015
Building Code Edition:	BC Building Code 2012
Subject:	Materials in Air Duct and Plenum Systems
Keywords:	Air duct systems, plenums, flame spread rating, joist cavity, I-joist
Building Code Reference(s):	9.33.6.1.(1), 9.33.6.2.(2), 9.33.6.4.(2)
Question:	<p>For Part 9 buildings, joist cavities formed by wood I-joists are sometimes used for air duct or plenum systems for heating systems with rated heat energy input not exceeding 120 kW and in which the air temperature does not exceed 120°C. Are the I-joists compliant with the materials characteristics required for this use; for example: flame spread rating, smoke developed classification, smoothness, etc?</p>
Interpretation:	<p>No.</p> <p>Sentence 9.33.6.2.(2) sets out the criteria for conformance of plenums containing combustible materials. One of these key criteria is conformance to Class 1 duct materials in CAN/ULC-S110-07, "Tests for Air Ducts". In that standard, Class 1 duct materials are required to have a maximum flame spread rating of 25 without evidence of continued progressive combustion, and a maximum smoke developed classification of 50. The standard subjects test samples also to various durability tests such as for erosion.</p> <p>Sentence 9.33.6.4.(2) also requires that when combustible coverings and linings, including associated adhesives and insulation are used for plenums and other parts of air duct systems, they shall have a flame spread rating not exceeding 25 throughout the material, and a smoke developed classification not exceeding 50.</p> <p>Typically, wood I-joists can be expected to have surface characteristics with flame spread rating as much as 150 and smoke developed classification as much as 300, and if not specially treated, cannot meet a Class 1 standard.</p> <p>Note however, that there are exceptions in Sentences 9.33.6.2.(5) &(6) for such combustible plenum systems contained entirely within a dwelling unit.</p> <p>Where the rated heat energy input exceeds 120 kW and in which the air temperature exceeds 120°C, the system must conform to Subsection 3.6.5 and Part 6.</p> <p> _____ R. J. Light, Committee Chair</p>
<p>The views expressed are the consensus of the joint committee with members representing AIBC, APEGBC, BOABC, and POABC, which form the BC Building Code Interpretation Committee. 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 <i>Authority Having Jurisdiction</i>. The views of the joint committee should not be construed as legal advice.</p>	
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