

# BC BUILDING CODE INTERPRETATION COMMITTEE

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

**File No: 18-0102**

**INTERPRETATION**

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Interpretation Date:	April 20, 2021
Building Code Edition:	BC Building Code 2018
Subject:	Calculating Effective Thermal Resistance
Keywords:	Effective, thermal resistance
Building Code Reference(s):	9.36.2.4.(1), A-9.36.2.4.(1)

## Question:

The formula for calculating the Effective Thermal Resistance of a Wood-frame Assembly in A-9.36.2.4.(1) yields results that are different than might be expected. If a wall has 50% framing area with  $RSI_F = 1$  and 50% cavity area with  $RSI_C = 5$ , the logical expected  $RSI_{eff}$  would be the average of 1 and 5 which would be  $RSI_{eff} = 3$ . Using the formula in A-9.36.2.4.(1) the result is  $RSI_{eff} = 1.667$ .

Is there something wrong with the formula?

## Interpretation:

No

The relationship between  $RSI_F$  and  $RSI_C$  is not linear when calculating the effective thermal resistance.

If 50% of the wall is solid wood framing, the thermal bridging has a much more significant impact on the effective thermal resistance which results in a much lower effective  $RSI$ .



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

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