

Ceiling Below Attic Assembly

Assembly # MA-03

Description: Flat ceiling with 38x184 (2x8) ceiling joist spaced at 406mm (16") o/c with 381mm (15") blown cellulose. Ceiling finished with 12.7mm (1/2") gypsum board.

Layer	Assembly Components (layer listed from exterior to interior)	RSI Value	R Value
1	Outside Air Film	0.03	0.170348
2	38x184(2x8) joist @ 406mm (16") o/c with 381mm(15") blown cellulose*	8.5981	48.82227
3	19mm (3/4") Strapping	0.15	0.851739
4	6 mil. Polyethylene	N/A	N/A
5	12.7mm (1/2") gypsum board	0.07747	0.439895
6	Inside Air Film	0.11	0.624609
Total		8.97	50.9

Note:
The thermal resistance values of each continuous layer incorporated in the assembly are from A-9.36.2.4.(1)D.

Parallel Heat Flow Calculation:

$$RSI_{\text{parallel}} = \frac{100}{\frac{\% \text{ area of framing}}{RSI_f} + \frac{\% \text{ area of cavity}}{RSI_c}}$$

% Area of Framing	13%	Value of the area of framing member obtained from Table A-9.36.2.4.(1)A
% Area of Cavity	87%	Values of the area of cavity obtained from Table A-9.36.2.4.(1)A
RSI Framing	1.564	
RSI Cavity	4.6	
RSI Parrallel *	8.5981	

Note: The above values and references are from the 2010 National Building Code of Canada. This document is intended to be used for reference purposes. The assembly components shall be detailed in a cross section on the submitted plans.

RSI_{eff} = 8.97 (m²·K)/W	R_{eff} = 50.9 (h·ft²·°F)/Btu
eff = effective thermal resistance	