

BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing
AIBC, EGBC, BOABC

File No: 18-0266

INTERPRETATION

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Interpretation Date:	July 19, 2023
Building Code Edition:	BC Building Code 2018
Subject:	Cantilevered Roof Trusses and their Impact on Supporting Structure
Keywords:	cantilevered, roof, trusses, supporting structure
Building Code Reference(s):	9.23.14.11.(1), A-9.23.14.11.(1), Table 9.23.4.2.-L.

Question:

1. For structures that are designed to Part 9, are there limits on the length the cantilevered portion of a roof truss when designing the supporting structure?
2. Do all trusses with cantilevers have to be designed to Part 4 using Part 9 loading?

Interpretation:

1. Yes.

Table 9.23.4.2.-L can be used for the design of built-up wood lintels supporting a roof and ceiling only.

Note 1 limits the maximum supported length of the roof truss to 4.9m.

Note 2 clarifies that the maximum supported length on lintels is based on $\frac{1}{2}$ the span of the truss plus the length of the overhang beyond the lintel.

To utilize Table 9.23.4.2.-L for lintel designs, the maximum length of the truss cantilever for various truss spans are illustrated below:

Truss Span	Maximum Allowable Truss Cantilever	
6m	1.9m	$(6m / 2 + 1.9m = 4.9)$
7m	1.4m	$(7m / 2 + 1.4m = 4.9)$
8m	0.9m	$(8m / 2 + 0.9m = 4.9)$
9m	0.4m	$(9m / 2 + 0.4m = 4.9)$



Patrick Shek, P.Eng., CP, FEC, 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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If the truss spans and cantilevers exceed these values, the lintels would have to be designed to Part 4 using Part 9 loadings.

2. Yes.

9.23.14.11.(1) describes the conditions where roof trusses need not be designed to Part 4 but 9.23.14.11.(2) requires that joint connections used in trusses be designed in conformance with the requirements in Subsection 4.3.1.

This is further described in the Notes to Part 9 as follows:

A-9.23.14.11.(2) - Wood Roof Truss Connections.

Sentence 9.23.14.11.(2) requires that the connections used in wood roof trusses be designed in conformance with Subsection 4.3.1. and Sentence 2.2.1.2.(1) of Division C, which applies to all of Part 4, requires that the designer be a professional engineer or architect skilled in the work concerned. This has the effect of requiring that the trusses themselves be designed by professional engineers or architects. Although this is a departure from the usual practice in Part 9, it is appropriate, since wood roof trusses are complex structures which depend on a number of components (chord members, web members, cross-bracing, connectors) working together to function safely. This complexity precludes the standardization of truss design into tables comprehensive enough to satisfy the variety of roof designs required by the housing industry.



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