

BC BUILDING CODE INTERPRETATION COMMITTEE
A joint committee with members representing
AIBC, EGBC, BOABC

File No: 18-0094

INTERPRETATION

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Interpretation Date:	May 18, 2021
Building Code Edition:	BC Building Code 2018
Subject:	Slope of Fire Department Vehicle Access Route
Keywords:	Fire Department, Access Route
Building Code Reference(s):	3.2.5.6.(1)(d)

Question:

Can a fire department vehicle access route have a change in gradient of more than 1 in 12.5 for a distance greater than 15 m?

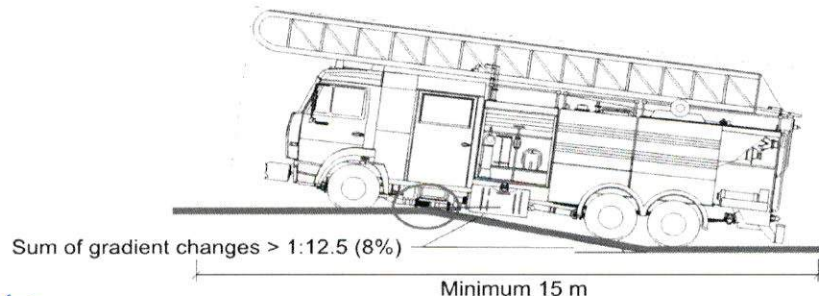
Interpretation:

No.

Sentence 3.2.5.6.(1) states the requirements applicable to a portion of a roadway or yard provided as a required access route for fire department use. Clause 3.2.5.6.(1)(d) requires the access route to “have a **change of gradient** not more than 1 in 12.5 over a minimum distance of 15 m”.

The minimum distance for the change in gradient is intended to reduce the possibility of a fire department vehicle bottoming out on the transition between roadway sections that have different slopes. For example, if a road has flat sections at different elevations with a short sloped section between them, the truck front and rear wheels could be on the front and rear flat sections but the underside of the truck could have minimal clearance at the transition from sloped to flat sections. See Figure 1 below. The maximum allowable gradient change of 1 in 12.5 is equal to 8%.

Figure 1 – Access Route NOT Code-Conforming
(2 changes of gradient: 5% at the bottom and 4% at the top = 9% total)



Patrick Shek

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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This Code requirement has not changed significantly in many years. The User's Guide to the National Building Code 1995 contained the following statement:

"A limit is also set on the change in gradient over short portions of the route, based on the angle of departure of the fire department vehicle. This angle of departure limit prevents a vehicle from dragging its back or centre sections as it negotiates a change in gradient."

Clause 3.2.5.6.(1)(d) also establishes the maximum change in gradient, which is 1 in 12.5 (8%). A sloped section longer than 15 m does not allow an increase in the allowable change in gradient. A steeper change in gradient could still cause a vehicle to bottom out where the gradient changes, even if there is a longer slope at that steeper gradient.

Figures 2 and 3 below show code-conforming access routes with one and two changes of gradient, respectively.

Figure 2 – Code-Conforming Access Route with One Change of Gradient
(one change of gradient at the bottom = 8%)

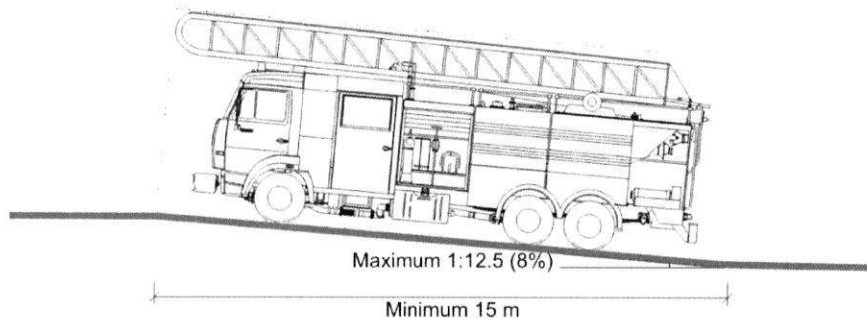
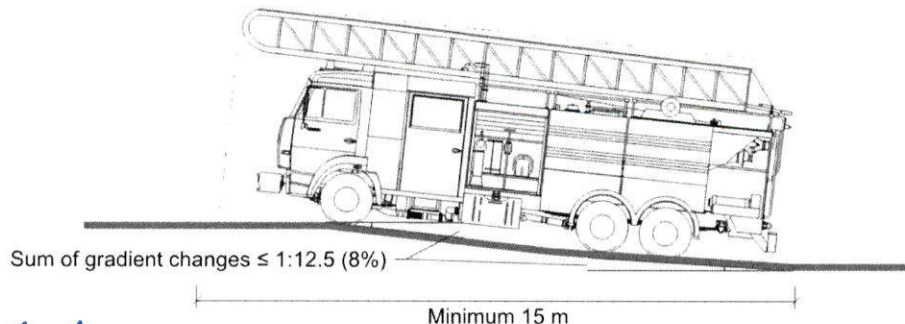


Figure 3 - Code-Conforming Access Route with Two Changes of Gradient
(2 changes of gradient: 4% at the bottom and 4% at the top = 8% total))



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