

BC BUILDING CODE INTERPRETATION COMMITTEE

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

File No: 12-0014

INTERPRETATION

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Interpretation Date:	Feb 18, 2014
Building Code Edition:	BC Building Code 2012
Subject:	Sway Bracing and Seismic Restraint for Piping
Keywords:	Sway Bracing, Seismic Restraint
Building Code Reference(s):	2.3.4.1.(1) ; 2.3.4.2.(1) ; 2.3.4.5.(1)(2)(6) ; 2.3.4.5.(5)(a) ; 3.2.5.12(1) ; 4.1.8.18

Question:

This project includes a long 12ft wide by 10ft tall tunnel for service piping. The piping consists of a 12 inch stainless steel fire and domestic water main, a 6 inch galvanized sanitary force main, as well as 10 inch and 14 inch System 15 PVC-DWV storm drains.

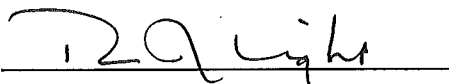
What regulates the pipe hanger spacing, sway bracing, and seismic restraint for all of the noted piping systems?

Interpretation:

Sentence 2.3.4.5.(2) references Table 2.3.4.5. for the maximum hanger spacing for all types of piping and would include the storm drains and the sanitary force main. Sentence 2.3.4.2.(1) requires independent support for all such pipe hangers. Sentence 2.3.4.1.(1) requires supports to be capable of keeping the pipe in alignment and supporting the weight of the pipe and its contents

Sentences 2.3.4.1.(1) and 2.3.4.5.(1)(2) make reference to providing some form of sway bracing for all piping systems but do not indicate any details on how to achieve an acceptable level of protection for the DWV piping and the sanitary sewer force main. However, while the placing of sway bracing would be site specific based on the diameters and length of the pipe hanger rods, sway bracing must be acceptable to the AHJ and, where applicable, a Professional Engineer of Record must be provided to ensure that it achieves adequate protection from misalignment of the piping that could cause pipe joint failures.

Clause 2.3.4.5.(5)(a) indicates the minimum diameters for pipe hanger rods where used for pipe support in all buildings.



R. J. Light, Committee Chair

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 *Authority Having Jurisdiction*. The views of the joint committee should not be construed as legal advice.

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Also, Sentence 2.3.4.5.(6) states that where a pipe hanger is attached to concrete or masonry it shall be fastened by metal or expansion-type plugs that are inserted or built into the concrete or masonry.

Since this building has a combined fire protection and domestic water service it is a sprinklered building, so Sentence 3.2.5.12.(1) requires compliance with NFPA 13-2007 which includes ULC or cUL listing for the sprinkler pipe material and the detailed installation requirements for sway bracing and seismic restraint for the fire protection system. The requirements of NFPA 13 do not apply to the sanitary and storm piping systems.

Where a building is subject to the structural requirements of Part 4, all supports for piping systems must be designed and installed in accordance with Article 4.1.8.18.. This would include seismic restraint considerations for the combined fire and domestic water service, the sanitary force main, and the storm drains as indicated in Table 4.1.8.18.

One other issue with this question is that, at this time, the proposed use of stainless steel piping for the combined water service serving the fire protection and the domestic systems would not be permitted, since the BC Plumbing Code does not reference this as an approved material for use in a water system.



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