

**BC BUILDING CODE INTERPRETATION COMMITTEE
AIBC, APEGBC, BOABC, POABC**

File No: 98-0075

INTERPRETATION

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Interpretation Date: June 18, 2003 (Revised October 27, 2004)

Building Code Edition: BC Building Code 1998

Subject: Water pipe sizing

Keywords: Sizing, water piping

Building Code Reference(s): 7.6.3.1.(2)(a),(b)&(c) Table P-7.6.1. and P-7.6.1.1.(1)

Question:

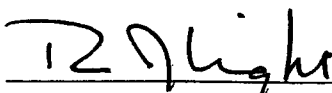
Can the 1998 BC Building Code Appendix Table P-7.6.1. obtained from the National Plumbing Code Appendix Table A-6.1. be used for copper tube and materials other than copper tube where sizes would be supported by good engineering practice and/or manufacturers recommended maximum velocities for water systems?

Interpretation:

The BC Building Code Appendix Table P-7.6.1. obtained from the National Plumbing Code is in conflict with the "unique to BC" Clauses 7.6.3.1.(2)(a), (b) & (c), and manufacturer's maximum velocities for pipes other than copper tube. The manufacturers of PVC piping also confirm a maximum velocity of 1.5 metres/sec. (5 feet/sec.) and use is restricted to cold water systems only.

Plastic pipe manufacturers other than PVC confirmed maximum velocities of 2.4 metres/sec. (8 feet/sec.) for their material. Good engineering practice publications suggest a maximum velocity of 2.4 metres/sec. (8 feet/sec.) to ensure performance of fittings, pipe joints, valves, and other components of the water system.

In consideration of the conflict contained within this Code edition, it is recommended that Appendix Table P-7.6.1. not be used and a Code Change Proposal has been submitted by POABC to correct the problem in future Code editions. Alternate sizing methods such as the POABC Tables (see attached) compiled from the ASPE Data Books are an example of one method that is consistent with the intent of BCBC Part 7 Clauses 7.6.3.1.(2) (a), (b) & (c).



R. J. Light, Committee Chair

The views expressed are the consensus of the joint committee of 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.



FLOW IN L/SEC. (GPM) IN L COPPER/PVC COLD FT./SEC

| Pipe Size | 5 Ft./Sec. (Cold) | | | | 4 Ft./Sec. (Hot up to 140°F) | | | 3 Ft./Sec. (Hot over 140°F) | | | |
|-----------|-------------------|----------|------------------|----------------|------------------------------|----------|--------|-----------------------------|----------|--------|--|
| | L/Sec. | (GPM) | With F.V. (F.U.) | No F.V. (F.U.) | L/Sec. | (GPM) | (F.U.) | L/Sec. | (GPM) | (F.U.) | |
| 1/2 | 0.23 | (3.64) | -- | 3.5 | 0.18 | (2.91) | 2.5 | 0.14 | (2.18) | 1 | |
| 3/4 | 0.48 | (7.54) | -- | 9 | 0.38 | (6.03) | 7.5 | 0.29 | (4.53) | 5 | |
| 1 | 0.81 | (12.86) | -- | 18 | 0.65 | (10.29) | 14 | 0.49 | (7.72) | 9.5 | |
| 1 1/4 | 1.24 | (19.59) | -- | 29 | 0.99 | (15.67) | 22 | 0.74 | (11.75) | 16 | |
| 1 1/2 | 1.75 | (27.72) | 10 | 46 | 1.40 | (22.18) | 34 | 1.05 | (16.63) | 24 | |
| 2 | 3.04 | (48.23) | 43 | 120 | 2.43 | (38.58) | 81 | 1.83 | (28.94) | 41 | |
| 2 1/2 | 4.69 | (74.37) | 125 | 245 | 3.75 | (59.50) | 170 | 2.82 | (44.62) | 105 | |
| 3 | 6.70 | (106.10) | 275 | 400 | 5.36 | (84.93) | 295 | 4.02 | (63.69) | 190 | |
| 4 | 11.78 | (186.65) | 800 | 850 | 9.42 | (149.32) | 600 | 7.07 | (111.99) | 420 | |
| 5 | 18.35 | (290.89) | 1625 | 1625 | 14.68 | (232.71) | 1125 | 11.01 | (174.53) | 750 | |
| 6 | 26.38 | (418.16) | 2875 | 2875 | 21.11 | (334.53) | 2125 | 15.83 | (250.90) | 1300 | |
| 8 | 46.06 | (730.42) | 8000 | 8000 | 36.87 | (584.34) | 4500 | 27.65 | (438.25) | 3000 | |
| Column 1 | 2 | | | | 3 | | | 4 | | | |

FLOW IN L/SEC. (GPM) FOR OTHER THAN COPPER/PVC AT 8 FT./SEC.

| Pipe Size | 8 Ft./Sec. | | | |
|-----------|------------|--------|--------------|--------------------|
| | L/Sec. | (GPM) | No F.V. (FU) | With F.V.'s (F.U.) |
| 1/2 | 0.36 | (5.8) | 7 | -- |
| 3/4 | 0.77 | (12) | 17 | -- |
| 1 | 1.26 | (20) | 30 | -- |
| 1 1/4 | 1.80 | (30) | 54 | 13 |
| 1 1/2 | 2.80 | (44) | 102 | 35 |
| 2 | 4.29 | (78) | 265 | 140 |
| 2 1/2 | 7.89 | (125) | 500 | 390 |
| 3 | 10.73 | (170) | 750 | 635 |
| 4 | 18.90 | (300) | 1800 | 1800 |
| 5 | 29.00 | (460) | 3350 | 3350 |
| 6 | 42.00 | (680) | 6800 | 6800 |
| 8 | 75.00 | (1300) | 16000 | 16000 |
| Column 1 | 2 | | | |

Note: -- The values and capacities in this table were obtained from the code referenced ASPE Data Books.