

OBC Fire protection calculations
Water supply for fire-fighting

Project JLXMD
 Date December 13, 2022
 Method Ontario building code 2012
 Designed by M. Jans / A. ElHatimi

$$Q = K \times V \times Stot$$

where :

Q = minimum supply of water in liters

K = water supply coefficient from table 1

V = total building volume in cubic meters

Stot = total of spatial coefficient values from the property line exposures on all sides as obtained from the formula :

$$Stot = 1.0 + (S_{side\ 1} + S_{side\ 2} + S_{side\ 3} + \dots)$$

K	18	(from table 1)
V	320	(total building volume in cu.m)
Stot	1.95	(from figure 1)
Q	11232	Litres

	approx.	from fig.1
Snorth	16.0m	0
Seast	4.2m	0.5
Ssouth	5.5m	0.45
Swest	30.0m	0

6300 L/min (if 190000<Q<270,000L)

Table 1					
Water Supply Coefficient - K					
Type of Construction	Classification by Group or Division in Accordance with Table 3.1.2.1. of the Building Code				
	A-2 B-1 B-2 B-3 C D	A-4 F-3	A-1 A-3	E F-2	F-1
Building is of noncombustible construction with fire separations and fire-resistance ratings provided in accordance with Subsection 3.2.2., including loadbearing walls, columns and arches.	10	12	14	17	23
Building is of noncombustible construction or of heavy timber construction conforming to Article 3.1.4.6. Floor assemblies are fire separations but with no fire-resistance rating. Roof assemblies, mezzanines, loadbearing walls, columns and arches do not have a fire-resistance rating.	16	19	22	27	37
Building is of combustible construction with fire separations and fire-resistance ratings provided in accordance with Subsection 3.2.2., including loadbearing walls, columns and arches. Noncombustible construction may be used in lieu of fire-resistance rating where permitted in Subsection 3.2.2.	18	22	25	31	41
Building is of combustible construction. Floor assemblies are fire separations but with no fire-resistance rating. Roof assemblies, mezzanines, loadbearing walls, columns and arches do not have a fire-resistance rating.	23	28	32	39	53
Column 1	2	3	4	5	6

OBC Fire protection calculations
Water supply for fire-fighting

Project JLXMD
Date December 13, 2022
Method Ontario building code 2012

Table 2	
Part 3 Buildings under the Building Code	Required Minimum Water Supply Flow Rate, L/min
One-storey building with building area not exceeding 600 m ²	1 800
All other buildings	2 700 (if Q ≤ 108 000 L) ⁽¹⁾ 3 600 (if Q > 108 000 L and ≤ 135 000 L) ⁽¹⁾ 4 500 (if Q > 135 000 L and ≤ 162 000 L) ⁽¹⁾ 5 400 (if Q > 162 000 L and ≤ 190 000 L) ⁽¹⁾ 6 300 (if Q > 190 000 L and ≤ 270 000 L) ⁽¹⁾ 9 000 (if Q > 270 000 L) ⁽¹⁾

Notes to Table 2:

(1) Q = KVS_{tot} as referenced in Paragraph 3(a)

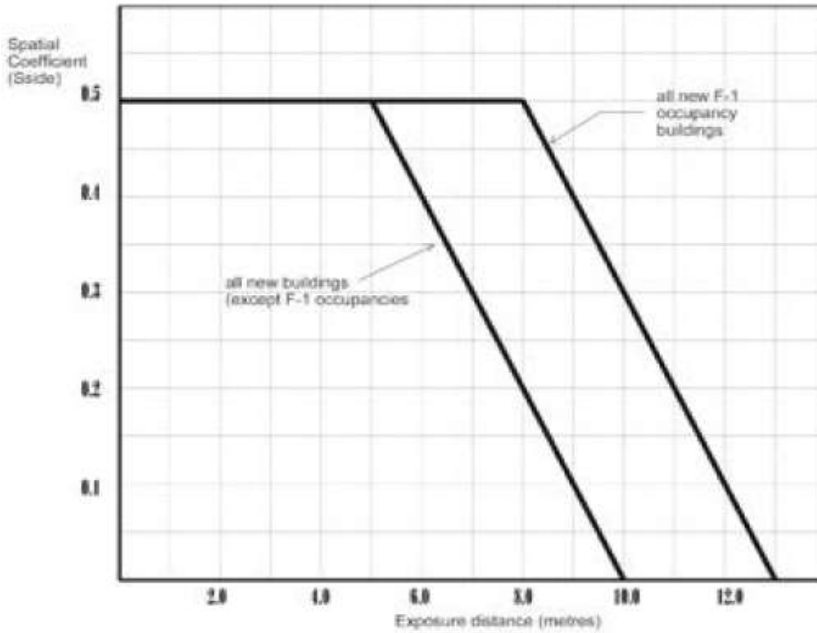


Figure 1
Spatial Coefficient vs Exposure Distance