Stantec

FUS Fire Flow Calculation Sheet

Stantec Project #: 160401608
Project Name: Kanata West Block 29
Date: 2021-03-24
Fire Flow Calculation #: 1
Description: 12-unit terrace flats (Block 1).

Notes: 3-storey building with 412 m2 footprint and 12 2-bedroom units (4 adjoining units each stacked 3 high).

Step	Task	Notes	Value Used	Req'd Fire Flow (L/min)
1	Determine Type of Construction	Wood Frame	1.5	-
2	Determine Ground Floor Area of One Unit	-	104	-
	Determine Number of Adjoining Units	Includes adjacent wood frame structures separated by 3m or less	4	-
3	Determine Height in Storeys	Does not include floors >50% below grade or open attic space	3	-
4	Determine Required Fire Flow	($F = 220 \times C \times A^{1/2}$). Round to nearest 1000 L/min	-	12000
5	Determine Occupancy Charge	Limited Combustible	-15%	10200
6	Determine Sprinkler Reduction	None	0%	0
		Non-Standard Water Supply or N/A	0%	
		Not Fully Supervised or N/A	0%	
		% Coverage of Sprinkler System	0%	

7	Determine Increase for Exposures (Max. 75%)	Direction	Exposure Distance (m)	Exposed Length (m)	Exposed Height (Stories)	Length-Height Factor (m x stories)	Construction of Adjacent Wall	-	-
		North	> 45	32.4	3	91-120	Wood Frame or Non-Combustible	0%	2856
		East	3.1 to 10	12.8	3	31-60	Wood Frame or Non-Combustible	18%	
		South	20.1 to 30	32.4	3	91-120	Wood Frame or Non-Combustible	10%	
		West	> 45	12.8	3	31-60	Wood Frame or Non-Combustible	0%	

8	Determine Final Required Fire Flow	
		Total Required Fire Flow in L/min, Rounded to Nearest 1000L/min	**13000**
		Total Required Fire Flow in L/s	**216.7**
		Required Duration of Fire Flow (hrs)	**2.50**
		Required Volume of Fire Flow (m^3)	**1950**

FUS Fire Flow Calculation Sheet

Stantec Project #: 160401608
Project Name: Kanata West Block 29
Date: 2021-03-24
Fire Flow Calculation #: 2
Description: 12-unit terrace flats (Block 2).

Notes: 3-storey building with 412 m2 footprint and 12 2-bedroom units (4 adjoining units each stacked 3 high).

Step	Task	Notes	Value Used	Req'd Fire Flow (L/min)
1	Determine Type of Construction	Wood Frame	1.5	-
2	Determine Ground Floor Area of One Unit	-	104	-
	Determine Number of Adjoining Units	Includes adjacent wood frame structures separated by 3m or less	4	-
3	Determine Height in Storeys	Does not include floors >50% below grade or open attic space	3	-
4	Determine Required Fire Flow	($F = 220 \times C \times A^{1/2}$). Round to nearest 1000 L/min	-	12000
5	Determine Occupancy Charge	Limited Combustible	-15%	10200
6	Determine Sprinkler Reduction	None	0%	0
		Non-Standard Water Supply or N/A	0%	
		Not Fully Supervised or N/A	0%	
		% Coverage of Sprinkler System	0%	

7	Determine Increase for Exposures (Max. 75%)	Direction	Exposure Distance (m)	Exposed Length (m)	Exposed Height (Stories)	Length-Height Factor (m x stories)	Construction of Adjacent Wall	-	-
		North	> 45	32.4	3	91-120	Wood Frame or Non-Combustible	0%	4182
		East	10.1 to 20	12.8	3	31-60	Wood Frame or Non-Combustible	13%	
		South	20.1 to 30	32.4	3	91-120	Wood Frame or Non-Combustible	10%	
		West	3.1 to 10	12.8	3	31-60	Wood Frame or Non-Combustible	18%	

8	Determine Final Required Fire Flow	Total Required Fire Flow in L/min, Rounded to Nearest 1000L/min	14000
		Total Required Fire Flow in L/s	233.3
		Required Duration of Fire Flow (hrs)	3.00
		Required Volume of Fire Flow (m^3)	2520

FUS Fire Flow Calculation Sheet

Stantec Project #: 160401608
Project Name: Kanata West Block 29
Date: 2021-03-24
Fire Flow Calculation #: 3
Description: 12-unit terrace flats (Block 3).

Notes: 3-storey building with 412 m2 footprint and 12 2-bedroom units (4 adjoining units each stacked 3 high).

Step	Task	Notes	Value Used	Req'd Fire Flow (L/min)
1	Determine Type of Construction	Wood Frame	1.5	-
2	Determine Ground Floor Area of One Unit	-	104	-
	Determine Number of Adjoining Units	Includes adjacent wood frame structures separated by 3m or less	4	-
3	Determine Height in Storeys	Does not include floors >50% below grade or open attic space	3	-
4	Determine Required Fire Flow	($F = 220 \times C \times A^{1/2}$). Round to nearest 1000 L/min	-	12000
5	Determine Occupancy Charge	Limited Combustible	-15%	10200
6	Determine Sprinkler Reduction	None	0%	0
		Non-Standard Water Supply or N/A	0%	
		Not Fully Supervised or N/A	0%	
		% Coverage of Sprinkler System	0%	
7	Determine Increase for Exposures (Max. 75%)	Direction / Exposure Distance (m) / Exposed Length (m) / Exposed Height (Stories) / Length-Height Factor (m x stories) / Construction of Adjacent Wall	-	-
		North / 3.1 to 10 / 12.8 / 3 / 31-60 / Wood Frame or Non-Combustible	18%	4692
		East / 30.1 to 45 / 32.4 / 3 / 91-120 / Wood Frame or Non-Combustible	5%	
		South / 20.1 to 30 / 12.8 / 3 / 31-60 / Wood Frame or Non-Combustible	8%	
		West / 10.1 to 20 / 32.4 / 3 / 91-120 / Wood Frame or Non-Combustible	15%	
8	Determine Final Required Fire Flow	**Total Required Fire Flow in L/min, Rounded to Nearest 1000L/min**		**15000**
		Total Required Fire Flow in L/s		**250.0**
		Required Duration of Fire Flow (hrs)		**3.00**
		Required Volume of Fire Flow (m^3)		**2700**

FUS Fire Flow Calculation Sheet

Stantec Project #: 160401608
Project Name: Kanata West Block 29
Date: 2021-03-24
Fire Flow Calculation #: 4
Description: 12-unit terrace flats (Block 4).

Notes: 3-storey building with 412 m2 footprint and 12 2-bedroom units (4 adjoining units each stacked 3 high).

Step	Task	Notes	Value Used	Req'd Fire Flow (L/min)
1	Determine Type of Construction	Wood Frame	1.5	-
2	Determine Ground Floor Area of One Unit	-	104	-
	Determine Number of Adjoining Units	Includes adjacent wood frame structures separated by 3m or less	4	-
3	Determine Height in Storeys	Does not include floors >50% below grade or open attic space	3	-
4	Determine Required Fire Flow	($F = 220 \times C \times A^{1/2}$). Round to nearest 1000 L/min	-	12000
5	Determine Occupancy Charge	Limited Combustible	-15%	10200
6	Determine Sprinkler Reduction	None	0%	0
		Non-Standard Water Supply or N/A	0%	
		Not Fully Supervised or N/A	0%	
		% Coverage of Sprinkler System	0%	
7	Determine Increase for Exposures (Max. 75%)	Direction / Exposure Distance (m) / Exposed Length (m) / Exposed Height (Stories) / Length-Height Factor (m x stories) / Construction of Adjacent Wall	-	-
		North / > 45 / 12.8 / 3 / 31-60 / Wood Frame or Non-Combustible	0%	2346
		East / 30.1 to 45 / 32.4 / 3 / 91-120 / Wood Frame or Non-Combustible	5%	
		South / 3.1 to 10 / 11.5 / 3 / 31-60 / Wood Frame or Non-Combustible	18%	
		West / > 45 / 32.4 / 3 / 91-120 / Wood Frame or Non-Combustible	0%	
8	Determine Final Required Fire Flow	**Total Required Fire Flow in L/min, Rounded to Nearest 1000L/min**		**13000**
		Total Required Fire Flow in L/s		**216.7**
		Required Duration of Fire Flow (hrs)		**2.50**
		Required Volume of Fire Flow (m^3)		**1950**