Town of Grimsby
Building Division
160 Livingston Ave
Grimsby, ON L3M 4G3
Tel 905-945-9634
www.grimsby.ca

Water Pipe Sizing Form - Housing

This form is to be completed for Part 9 housing applications.

Project Information

Project location	
Size of existing water service	Number of dwelling units served

Specify Building / Project Type

☐ New Dwelling/Additional Dwelling Unit	☐ Addition (with new plumbing fixtures)
☐ Interior alterations (with new plumbing fixtures)	☐ Accessory Building with Plumbing, including detached ADU

Water Service Pipe Sizing - Hydraulic Load (Fixture Unit Calculation)

Fixture or Device	Minimum Size of Supply Pipe (inches)	Private Use Hydraulic Load, fixture units		Quantity		Total Hydraulic Load, fixture units
Bathroom Group with 6 LPF flush tank [1]	N/A	3.6	x		=	
Bathtub with or without shower head	1/2	1.4	x		=	
Bathtub with ¾ in. spout	3/4	10	x		=	
Bidet	3/8	2	x		=	
Clothes washer, 3.5 kg	1/2	1.4	x		=	
Dishwasher, domestic	3/8	1.4	x		=	
Hose bibb	1/2	2.5	x		=	
Hose bibb	3/4	3	x		=	
Lavatory (bathroom sink), 8.3 L/min or less	3/8	0.7	x		=	
Shower head, 9.5 L/min or less per head	1/2	1.4	x		=	
Shower, spray, multi-head, fixture unit per head	**	1.4	x		=	
Sink, bar	3/8	1	x		=	
Sink, kitchen, domestic, 8.3 L/min or less	3/8	1.4	x		=	
Sink, laundry, 1 or 2 compartments	3/8	1.4	x		=	
Water Closet, 6 LPF or less with flush tank	3/8	2.2	x		=	
Other (Specify):			x		=	
Total Fixture Units					=	

(Fixture Units from Table 7.6.3.2.-A of Division B of the OBC)

***Refer to manufacturer's recommendations.*

Note [1]: Bathroom group means a group of plumbing fixtures installed in the same room, consisting of one (1) water closet, one (1) lavatory (basin) and either one (1) bathtub or one (1) one-headed shower.

Additional fixtures within the bathroom to be counted separately.

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Sizing of Water Service Pipe – Option 1 (Complete Only for one or two dwelling units or row houses with separate water services conforming to 7.6.4.1.(5) of Division B of the OBC)

Nominal Pipe Size of Water Pipe, NPS	Water Velocity m/s [1]		
	3.0	2.4	1.5
	Hydraulic Load, fixture units		
½"	8	7	4
¾"	21	16	9
1" [2]	43	31	18
1 ¼"	83	57	30
Total Hydraulic Load (Fixture Units):		**Water Service Pipe Size (NPS):**	

(Water pipe sizing from Table 7.6.3.4. of Division B of the OBC)

Note [1] - If a water velocity is other than listed in the above table, provide documentation showing the maximum permitted water velocity with maximum hydraulic loads for each water pipe size as recommended by the pipe and fitting manufacturer.

Note [2] - A NPS ¾ incoming water service is permitted in a house containing only one dwelling unit provided the total fixtures units does not exceed 26 and supply piping is installed in conformance with OBC, Division B, Sentence 7.6.3.4.(6).

Sizing of Water Service Pipe - Option 2 (For all other residential building types not covered under Option 1)

Size and capacity of water service pipe shall be designed in accordance with 7.6.3.1 of Division B of the Ontario Building Code (OBC), following Table A-7.6.3.1. Where the total fixture unit values exceed those given in the Table, the system must be designed according to a detailed engineering design method.

Total Hydraulic Load (Fixture Units):	Incoming Water Pressure (kPa):
Total Length of Water Service Pipe [1] (m):	Water Service Pipe Size (inches):

Note [1] Total length of water service pipe to be measured from water meter to most remote fixture.

Design of Water Pipe

Pipe Material, Manufacturer		
Velocity (metres per second)	=	
Hydraulic Load (fixture units)	=	
Water Service Pipe Diameter (inches)	=	

Name	BCIN	Signature

Explanatory Notes

Every water distribution system shall be designed to provide peak demand flow when the flow pressures at the supply openings conform to the plumbing supply fitting manufacturer's specifications. Every water service pipe shall be sized according to the peak demand flow but shall not be less than ¾ in. in size.

Where both hot and cold water is supplied to fixtures in residential buildings containing one or two dwelling units or row houses with separate water service pipes, the water system may be sized in accordance with Part 1 and Part 2 of this form, where the hydraulic loads for maximum separate demands on water distribution system piping are not less than 100% of the total hydraulic load of the fixture units given in Tables 7.6.3.2.A., 7.6.3.2.B., 7.6.3.2.C. and 7.6.3.2.D. for private use, a minimum water pressure at the entry to the building is 200 kPa and the total maximum length of the water system is 90 m.

Note: Water Service Connections
Once the size of the water service has been established, it is the responsibility of the owner or the agent of the owner to make an application to the Town of Grimsby Public Works department for the coordination of water meter installation on service connections to the public service at 905.945.9201.