Residential Hydraulic Load Calculation Form

One or Two Dwelling Units Only

Project Information

Municipal Address:		**Unit No.:**	
Size of Existing Water Service:		**Permit No.:**	

Hydraulic Load: Fixture Unit Calculation

Hydraulic Load for fixtures listed below referenced from the Ontario Building Code, Division B, Table 7.6.3.2.A.

Fixture Type	Fixture Units (Hydraulic Load per fixture)	Number of Fixture(s)	Total Fixture Units
Bathroom Group (1)	3.6		0.0
Water Closet	2.2		0.0
Bathroom Sink	0.7		0.0
Bathtub / Shower	1.4		0.0
Kitchen Sink	2.0		0.0
Dishwasher	1.4		0.0
Clothes Washer	1.4		0.0
Laundry Tub	1.4		0.0
Hose Bibb	2.5		0.0
Other			
Other			
		Total Fixture Units	0.0

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.

Water Service Pipe Sizing

The size and capacity of a water service pipe shall be designed in accordance with Table 7.6.3.4., Division B of the Ontario Building Code. Where the total fixture unit values exceed those given in the Table, the system must be designed using a detailed engineering design method.

Water Service Line Size	Maximum Fixture Units
¾" (1)	16
1"	31
1-1/4"	57

Note 1: For a House containing only one dwelling unit the maximum Fixture Units for a 3/4" water service line is 26.

Permitted Water Service Line Materials

Permitted water service line materials listed below are referenced from the Ontario Building Code Division B, Table 7.2.11.2.

Material	Specifications
Polyethylene pipe and fittings	Series 160 or higher CSA B137.1
Crosslinked polyethylene (PEX) pressure pipe or tube and fittings	CSA B137.5
PVC pipe and fittings	CSA B137.3 (requires a rated working pressure of 1,100 kPa or more)
CPVC pipe and fittings	CSA B137.6 (design temperature and pressure shall conform to CSA B137.6)
Type K soft copper tube	ASTM B88

Note:

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.

This checklist is based on the water pipe sizing requirements described in Part 7 of the Ontario Building Code (OBC) and is not substitute for complying with the requirements of the OBC. While care has been taken to ensure accuracy of this checklist, designers must refer to the actual wording and requirements of the OBC.