



PLUMBING

A Homeowners Guide For The Installation Of Plumbing

The information in this pamphlet is a brief summary of the comprehensive stipulations of Part 7 of the Code and is intended only to give the reader an overview of the many requirements therein. For accurate reference please refer to the appropriate provisions of Part 7 of the Ontario Building Code and/or Building By-law 2005-91, as amended.

THE PLUMBING SYSTEM

The plumbing system in a dwelling comprises four basic elements as follows:

1. The Water Supply and Distribution System

This system is composed of the water pipes which transport fresh water from the source of supply and conveys it to the fixtures and appliances and in the cast of hot water, from the water heater to the fixtures and appliances. The source of supply may be the municipal system or a private well or cistern, etc.

2. The Drainage System

This system consists of the drain and sewer pipes which convey waste fluids from the fixtures to a place of disposal which may be the municipal sewer system, or a septic tank or holding tank, etc.

3. The Venting System

This system consists of pipes which terminate in open air above the roof connected to the drainage system and which introduces air into the drainage system.

4. The Fixtures and Appliances

These consist of the sinks, wash basins, water closets (toilets), laundry tubs, water heaters, washing machines, etc. All fixtures are required to be vented and equipped with a trap which provides a water seal in the drain and thus prevents the emission of sewer gases.

THE CODE

The installation of plumbing is regulated by Part 7 of the Ontario Building Code and The Building By-law of the City of Welland.

The Code is administered and enforced locally by the Chief Building Official of the City of Welland. This includes responses to enquiries, processing of Applications, issuance of Permits and inspection of plumbing installations.

Before any plumbing work commences an Application for a Permit should be made and a Permit obtained. It is the responsibility of the property Owner and any person performing plumbing installations to ascertain whether or not a Permit is required and to ensure that the work is inspected at the appropriate stages.

A Permit is required for the following work:

- (a) The installation of plumbing in a new building.
- (b) The installation of new plumbing in an existing building.
- (c) The alteration of existing plumbing.
- (d) The repair of existing plumbing except for the repair of existing fixtures, leaks or blockages.
- (e) The replacement of existing plumbing except for the replacement of existing fixtures or existing water heater.

A Plumbing Permit can only be issued to a qualified, licensed Master Plumber except where the Owner of a residence is performing the work, at or in that residence for his/her own use.

To obtain a Permit an Application, duly completed, should be presented to Infrastructure and Development Services – Building Division at City Hall. The Application should be accompanied by a floor plan of the dwelling showing the location of the fixtures to be installed and schematic or sectional drawing showing the proposed drainage and venting layout. (A schematic drawing and a sectional drawing of a typical residential plumbing system is attached hereto.)

Some of the more common terms used in plumbing and defined in the Code are as follows:

Building Drain

The horizontal pipe at the lowest point in the building (generally under the basement floor) which receives the discharge from the other drainage

pipng.

- Clean Out** A fitting access in a drainage pipe for cleaning and inspection provided with an air-tight cover.
- Drainage Piping** All piping which conveys sanitary waste and liquid to a building drain.
- Fixture** A receptacle that receives water, etc. and which discharges into drainage piping.
- Horizontal** Departing from the true horizontal by not more than 45 degrees.
- Potable Water** Water fit for human consumption.
- Stack** A vertical drain, waste or vent pipe that serves one or more fixtures.
- Trap** A fitting or device that provides a liquid seal to prevent the emission of sewer gas without affecting the flow of waste water.
- Vent** A pipe that is installed to provide a flow of air, to or from drainage piping, and which terminates an open air at the vent stack.

NB. All of the above are represented on the attached schematic drawing.

The minimum size of piping, in general, which is required to serve a specific fixture of appliance, is as follows:

1. Water Pipes

The minimum size of water service pipe entering a dwelling from the exterior is required to be 3/4" diameter. The 3/4" diameter should be maintained towards the water heater until the first takeoff or branch and thereafter it can be reduced to 1/2" diameter. The hot and cold water distribution system requires a minimum diameter of 1/2".

2. Drainage Pipes

The minimum size of pipe serving the various fixtures is as follows:

DESCRIPTION	MINIMUM DIAMETER (INCHES)
Building Drain	4
Floor Drain	3
Bath Tub	1 1/2
Bidet	1 1/4
Dishwasher	1 1/2
Laundry Tub	1 1/2
Wash Basin	1 1/2
Shower Stall	1 1/2
Sink (Kitchen)	1 1/2
Water Closet (Toilet)	3

3. Vent Pipes

DESCRIPTION	MINIMUM DIAMETER (INCHES)
Main Vent Stack (Through Roof)	3 inches minimum diameter

All other vent pipes in a dwelling are generally required to be a minimum diameter of either 1 1/2" or 1 1/4" as shown on the attached schematic dwelling.

MATERIALS

The most commonly used materials in plumbing in a dwelling are copper water pipes, ABS plastic drainage and vent pipes above ground and PVC plastic drainage pipes below ground. However, a wide variety of other materials as listed in the Code can be used.

It should be noted that all materials, fixtures and appliances in a plumbing system are required to meet prescribed standards, e.g. certified by the Canadian Standards Association or other accredited testing Agency, as applicable. The installation of any element of a plumbing system which does not meet the required standard would not be accepted when the work is inspected.

INSPECTION

All plumbing for which a Permit has been issued is required to be inspected. No plumbing should be covered or concealed until it has been inspected and no plumbing system should be put into use until it has been inspected and the use authorized.

LOW FLOW FIXTURES

Water efficient water closets (toilets), shower heads and faucets are now required to be installed in accordance with OBC 7.6.4.

METERS

A meter is now required to be installed in every dwelling. In the case of a new dwelling, a meter is required to be installed prior to occupancy.

COMBUSTIBLE PIPING

Combustible piping is permitted in single, semi or townhouse dwelling units, however, in all other types of buildings non-combustible piping may be required.

BACKFLOW PREVENTION

The requirements for backflow prevention shall be in accordance with OBC 7.6.2. including hose bibs installed outside the building or inside the garage.

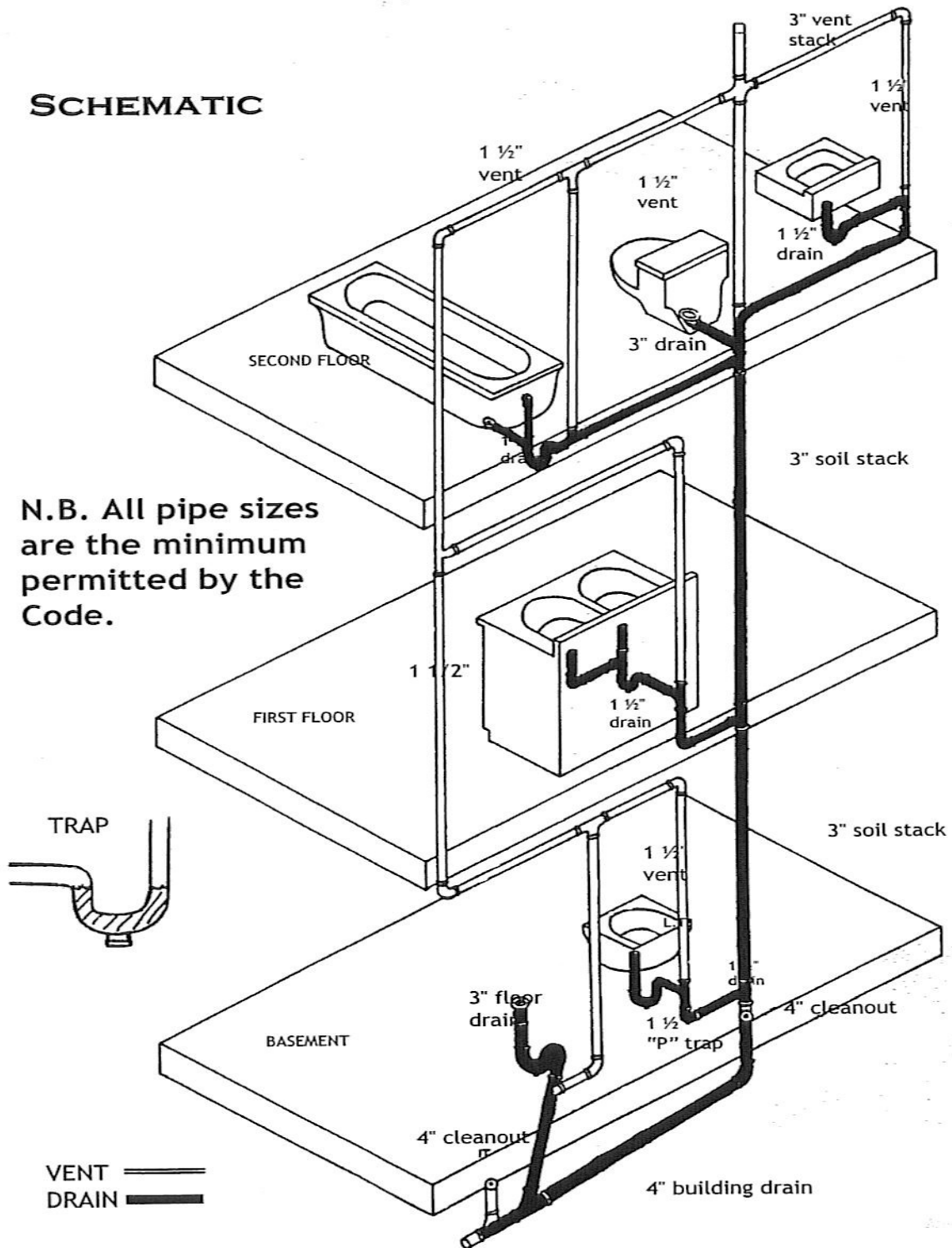
MIXING VALVES

Except for hot water supplied to installed dishwashers or clothes washers the maximum temperature of hot water supplied by fittings to fixtures, in a residential occupancy

shall not exceed 49 degrees Celsius (120 degrees Fahrenheit), OBC 7.6.5.1.(1)(2).

TYPICAL RESIDENTIAL PLUMBING SYSTEM

SCHEMATIC



BACKWATER VALVE/SUMP PUMP

Where a building drain or branch may be subject to backflow, a backwater valve shall be installed, OBC 7.4.6.4.(3). A backwater valve must only serve one (1) dwelling and must be "normally open" and conform to the applicable standard. The manufacturer's specifications and installation guidelines for the backwater valve shall be followed including regular maintenance. A backwater valve must only be installed where the weeping tiles are not connected to the sanitary drain. This is usually accomplished with a sump pit and pump to discharge weeping tile water to the surface.

SUMMARY

If you require any further information about installation of plumbing or wish to obtain a Permit please contact Infrastructure and Development Services – Building Division at City Hall, 60 East Main Street, Welland, Ontario, Telephone 905-735-1700, Extension 2251 or 2257 between the hours of 8:30 a.m. and 4:30 p.m. and someone would be happy to answer any question.

HOW CAN I FIND OUT MORE?

Contact

The City of Welland
Infrastructure and Development
Services
Building Division

60 East Main Street
Welland, Ontario
L3B 3X4

Tele: 905-735-1700

Fax: 905-735-8772

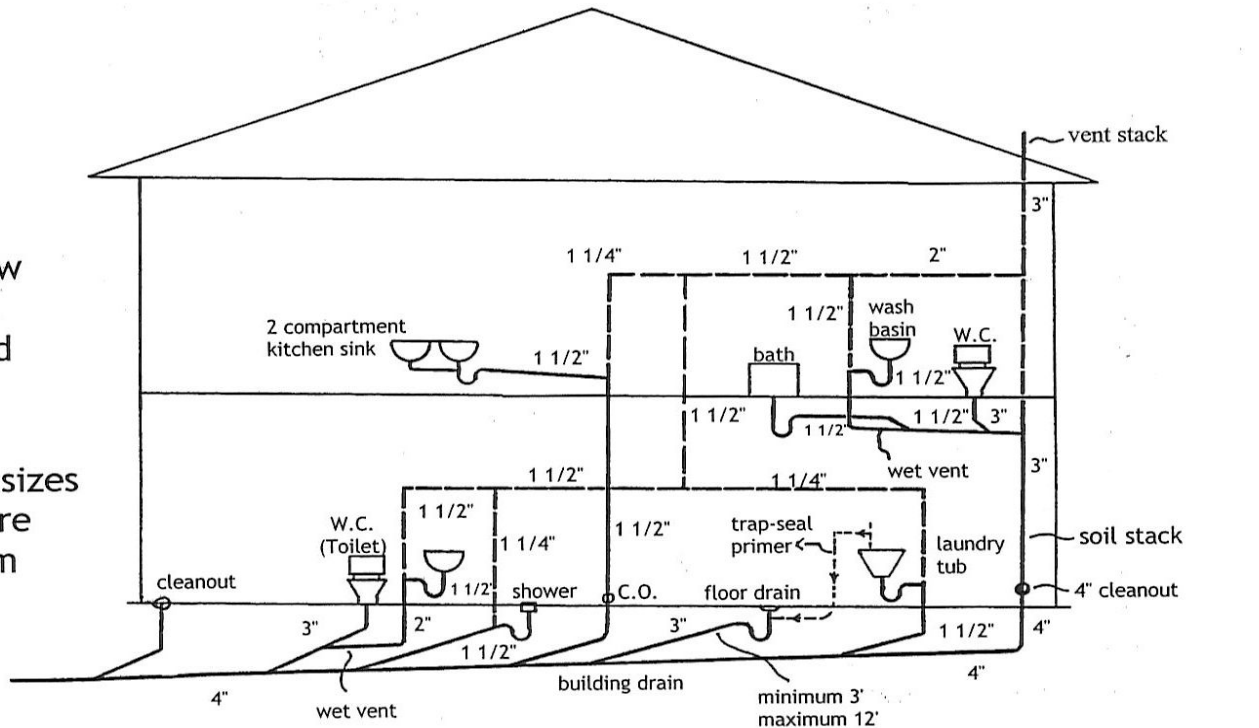
Email: devserv@welland.ca

Website: www.welland.ca

TYPICAL RESIDENTIAL PLUMBING LAYOUT CROSS - SECTION N

Low-flow
fixtures
required

All pipe sizes
shown are
minimum



NOT TO SCALE

VENT - - - -

DRAIN ———

Maximum length of a
vent from a fixture - 5 feet